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ROBERT S. PEABODY FOUNDATION
FOR ARCHAEOLOGY

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SECOND ANNUAL REPORT

OF THE

BELIZE ARCHAIC ARCHAEOLOGICAL

RECONNAISSANCE

by

RICHARD STOCKTON MACNETISH

[Signature]

A project supported by a grant in aid from
THE NATIONAL SCIENCE FOUNDATION
and
EARTHWATCH

[Signature]

Gardner

PHILLIPS ACADEMY--ANDOVER, MASSACHUSETTS
Published by the Foundation
1981

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SECOND ANNUAL REPORT

Printed for

THE BELIZE GOVERNMENT

in appreciation

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THE ARCHAEOLOGICAL COMMISSIONER

and

THE DEPARTMENTS OF

ARCHAEOLOGY and FORESTRY

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Fig. 1. Map of Belize showing relevant sites.

INTRODUCTION

1981 was a very bad year! Even before it started, one of our necessary proposals for operating expenses was rejected, our expected funds from Earthwatch were 24 percent less than we hoped, and our NSF grant was cut by 34 percent. So, we started our research program in bad financial shape and had to retreat to previously unprepared positions. In actual fact, to pay for personnel we lost a vehicle (a bad exchange) and borrowed headquarter facilities rather than build a permanent base. As we were reeling from this blow (as well as from a personal loss by the director), the Ford Motor Company dealt us a further blow by being six weeks late in the delivery of our rolling stock which came neither in good mechanical shape nor with the accessories we payed for.

However, in spite of it all, George Galasso and David Picoski did finally leave Andover on February 14 (only two frustrating weeks after our scheduled departure). After a series of misadventures - troubles at borders and rendezvous that never were kept - they, now supplemented by the services of Steve Usrey and Tom Emerson, joined the backup group - the Keiths, the Whites, Jeff Wilkerson, Vicki Velasco, Ponciano Ortiz and Mary Dell Lucas - who had gone on ahead to Orange Walk Town and the site of a ruined former nightclub that was to become our new home.

I, accompanied by Lindy Gifford, Julie Hendon, and two hundred pounds of Annual Reports that did not get printed in time to leave with the trucks, arrived in Belize City, four hours late, on February 24 (three weeks late) in a tropical downpour. After a cold supper in wet clothes, a sleepless night because our neighbors in the Hatiesville Motel set their bed on fire at 3 a.m., and the recounting of the woes of the expedition by our Field Director, Jeff Wilkerson, and my Administrator, Bill White, we arrived in our Orange Walk camp to find things were really worse than they had lead me to believe.

However, things were not so bad that they couldn't get worse! So we separated these badly disgruntled people into two groups, who really never cooperated again! The southern group at Melinda dealt with administrative and tactical problems - getting tax write-offs, buying cheaply in bulk, special car permits, special housing, freeing our impounded equipment, giving our trucks to Belize, etc., etc., and none of it worked. In time and money spent in negotiations, we could have dug a couple of sites and published the results. In the northern camp, we tried to do just that. But in actual fact, we first dug at Guinea Grass with no equipment since it was impounded.

Then our students fought with an attempted "military" takeover by our coordinators. Further, we were fighting time, for we had to train our students, get two areas of excavation going, and get ready for our 46 Earthwatch volunteers. We were now 10 weeks behind, with three or four weeks to go. And yet we made it. We were ready by March 28 for our first 18 volunteers - the last hut was built, and the floor marled down 45 minutes before the first group arrived at Orange Walk. The paint of the barracks at Melinda still smelled when the other group moved in there to be kept awake by the chickens, dogs, and squalling children.

It almost looked like it was going to work in spite of the fact that the Guinea Grass excavation had produced mixed sherds down to the bottom. This was frustrating enough, but as well, our administrative negotiations had ground to a halt, and we were running \$3,000 to \$4,000 in the hole.

However, per our new motto - things were not so bad that they couldn't get worse - they did. At the end of the first week our overworked student staff was forced to work even more when our Earthwatch coordinators left us in the lurch.

As our Melinda sites began to go sour, our Field Director and his aide had to leave for two weeks, due to prior commitments in Veracruz. Then, things got hectic - 18 new mouths to feed, 36 more hands to keep busy, more duties, changing volunteers weekly, more to be trained in field and lab duties, and everybody had to be kept happy at night gabbing. Site 84 at Melinda was a fiasco; 83 worse; 62 a waste; 184 frustrating; etc., etc., but we worked and worked. We also survived - fer-de-lance serpents in the bathrooms, thieves in the barracks, national strikers, rumbles of revolution, and a diminishing exchequer. Even my Tehuacan and Peruvian project proposals were turned down. To further complicate matters, my Board of Trustees, due to their advisor, back at Phillips Academy, Andover, were deciding to have the Peabody Foundation closed down as a research institution and to have me as it's research director removed. Then, suddenly, it was May 16, our big final bash came and went, and all was basically over.

And yet - looking back - after recovering from a state of sheer exhaustion, we really did very well. We not only got up off the floor, but also we were winning handily at the time of the bell. So now let me tell you about what we did accomplish archaeologically and forget about the disasters - personal or otherwise.

A real accomplishment was our excavation of the Betz Landing site - BAAR 6. It gave us a picture of the life of the first preceramic fisherman between 5,000 and 6,000 years

ago for the first time in the history of Mesoamerican archaeology. Further, it defined and documented our hypothetical Melinda phase, previously known only from inadequate survey. The data and inference of these materials from this beautifully done excavation were a real contribution to knowledge for the Mesoamerican area - and later in this monograph, we will give you the details.

Almost as important a contribution was the information derived from our equally well accomplished excavations at the Lowe-ha site - BAAR 35. This contribution was, however, of a totally different nature, for it gave us data from 11 stratified zones about the first three earliest groups of inhabitants so far found in Belize. Not only was this a first for Belize, but the first stratified preceramic remains for all of lowland Mesoamerica. It was an auspicious start, which we will explain later in this volume.

Survey continued and did produce four or five more sites - some stratified. These will be excavated in future seasons, so we will eventually have a solid stratigraphic established chronology of phases for this region. Here, I might add that the most important sites discovered were shown to me by Tom Kelly of the Colhua project. We reaped the benefits of his hard work- as we had done on Lowe's Farm. I garnered 14 bags of preceramic artifacts from 10 sites in one eight-hour period from one small area north of Ladiesville - albeit at a price of near physical exhaustion. Never had so much been accomplished for the preceramic of Mesoamerica for so little and in so short a time. These finds will change our whole future research program and will be gone into in further detail in the pages which follow.

As you shall see, we finally got around to analyzing some reconnaissance finds of last year and some previous hypothesis have been modified. While we still did survey and were nomadic, we also found a home which we partially built this season and which will serve as a base and central laboratory for future investigations. Our new home is the property of Mary Ann Boggess and Bada Hasin. It is situated along the New River to the west of their house in the south outskirts of Orange Walk. The former dance hall has been converted into a mess hall, kitchen and spacious laboratory, the band stand is my office, the bar has become a storeroom and cooks' quarters. The toilets and showers now work, the old urinal is now a photographic room, and we have another storeroom and sleeping quarters for the guardian. Further, we built four large, palmroof quiche huts - two are dormitories while the other two are divided into family quarters. As one of the Earthwatchers said, "The living is Spartan, but

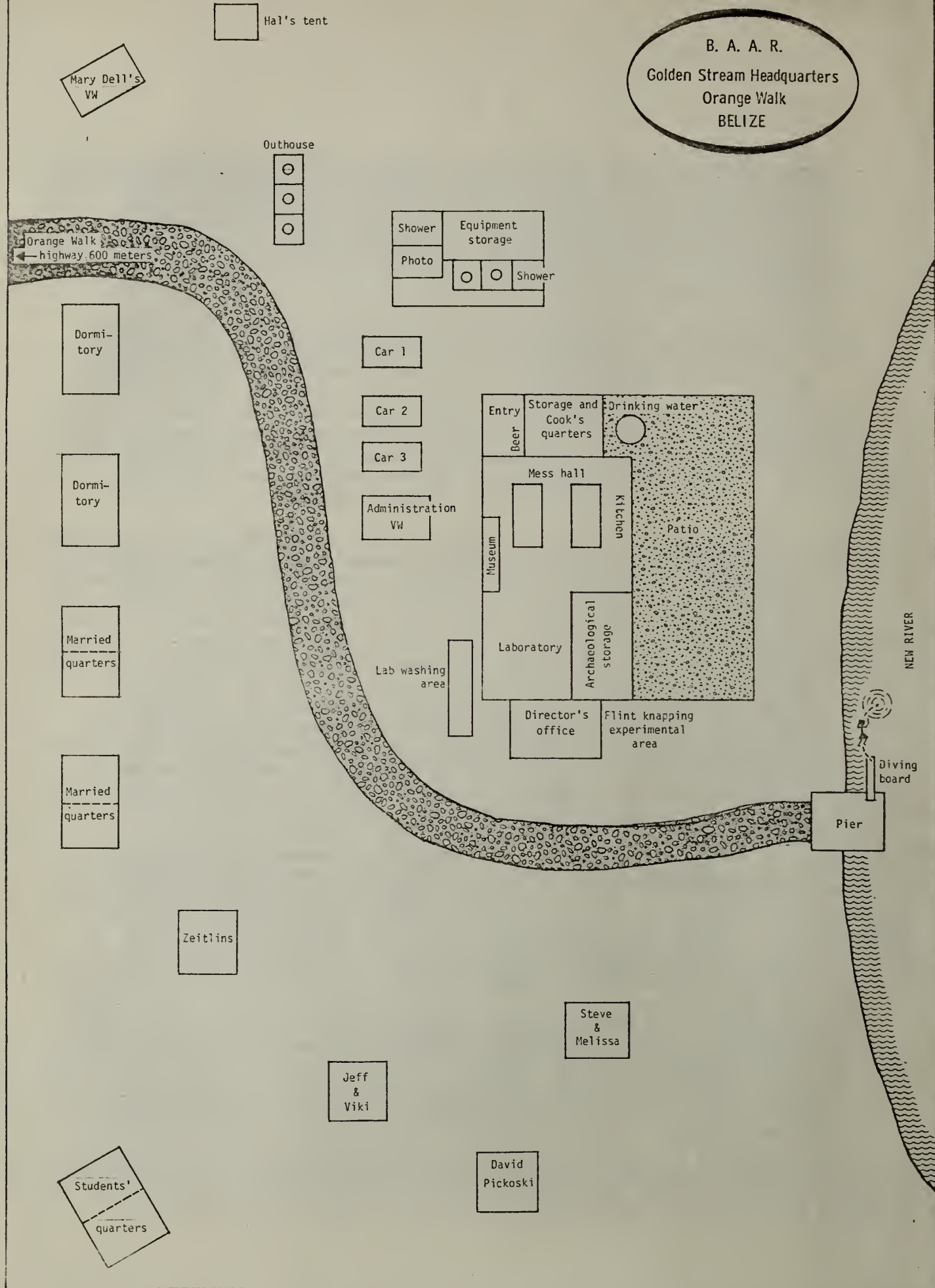


Fig. 2. Map of Golden Stream Camp.

good" The latter, I'm sure refers to our cuisine.

Aurora Mendez was our hardworking cook and the best I've ever had in the bush. She had good assistants - Lola and Idealia, who not only helped her, but also cleaned the place and did the laundry. It will be great for future operations, and David Picoski deserves a vote of thanks for making it work so well. I might add that our second camp at Melinda in the Forestry Station was just as well run thanks to the efforts of Vicki Velasco, Bill and Joe White and, of course, our Field Director, Jeff Wilkerson. Fortunately, we will abandon this one because of the poor archaeological finds and that should solve the coordination problems. All in all, we are ready for future seasons, more people, and more research at a convenient spot in the friendly town of Orange Walk.

Further, in spite of non-philanthropic contributions at the Mexican border, impounding equipment, and a little larceny, we now have great specialized equipment in our new headquarters. The initial planning was done in Andover with the able help of Judy and Bob Zeitlin and Lindy Gifford. They as well as Fred Johnson, Sue Dadd, Bob Forget, Gene Winter, and Joe Richard, and the Keiths bought or acquired the actual items. Between them, they did a great job, the sort an administrator should normally do.

Just for the record, the equipment list is available to those who are interested. We even invented some new specialized tools, such as our flattened and straight edged WPA sharpened long-handled shovels, our measuring sticks with levels, protractor and plumb bobs for easy measuring of in situ artifacts. We even had tool kits for each square with pockets for trowels, paint brushes, plumb bobs, line levels, Swiss army knives, grapefruit knives, dental tools, ice picks, nails, string, tags, bags, etc. Everybody had a kit and there was no confusion while digging or time wasted looking for necessary tools.

However, it was not just tools of the trade that were well organized. Even our record keeping was regimented to be uniform, and our forms acted as a sort of check list so that no pertinent data could be forgotten during the field work. Not only did these 10 forms (see examples) cover most recording items and have descriptive subdivisions, but also they were color coded and put in three hard-cover, three-ring notebooks that also were color coded according to site. BAAR 6 was red, BAAR 35 yellow, BAAR 83 green, BAAR 84 appropriately black, etc. Further, as you can see (figures 4-15) not only did we have color coded forms but also these were with bags with square tags for specific square cloth bags that



Fig. 3. Digger with tool kit.

SURVEY FORM
PEABODY B. A. A. R.

Number

Name

Date

Longitude

Latitude

Map Number

Description

Length

Width

Depth

Topography

Soil

Vegetation

Nearest Water

Artifacts

Bag Numbers

Culture

Excavation Potential

Owner

Address

Attitude Toward Excavation

Institution

Address

Permit & Number

Discoverer

Access

Site Sketch on Back

DIARY

PEABODY B. A. A. R.

Date.....

Author.....

Date, Annotation,Text

FIELD CATALOGUE RECORD
PEABODY B. A. A. R.

Site.....

<u>Cat. no.</u>	<u>Square</u>	<u>Level</u>	<u>Zone</u>	<u>Material</u>	<u>Quantity</u>
-----------------	---------------	--------------	-------------	-----------------	-----------------

SQUARE DESCRIPTION RECORD
PEABODY B. A. A. R.

Site.....

Photo no.

Square.....

Drawings

Sq. cat. no.

Level

Depths

Zone

Comments

Worker

Date

Site
 Square
 Zone
 Collector
 Bag
 Recorded by
 Notes over

Level

Date

Cat. no.

Site

Square

Zone

Collector

Bag

Recorded by

Notes over

Level

Date

Cat. no.

BAG TAG

B. A. A. R.

Site

NS

EW

dd

Date

IN SITU

TYPE

Fig. 8. The BAAR tags.

MAPPING RECORD
PEABODY B. A. A. R.

Site.....

Actual elevation at dd.....

Locations(Datum) DepthsDescriptionRecorderDate

FIELD PHOTOGRAPHIC RECORD

PEABODY B. A. A. R.

Site.....

Photographer.....

Roll Photo no. DateDescriptionCatalogue no.

14
FEATURE RECORD
PEABODY B. A. A. R.

1. Site
2. Feature no.
3. Square
4. Depth: from to.....
5. Associated zone
6. Intrusive from
7. Matrix
8. Associated features and objects
.....
.....
9. Description
.....
.....
.....
.....
.....
.....
.....
.....
10. Other data
.....
.....
11. Packaging and treatment Box Bag
12. Drawing By
13. Photo no. By
14. Exposed by 15. Recorded by
16. Date

Fig. 11. The BAAR feature form.

BURIAL RECORD

PEABODY B. A. A. R.

1. Site	2. Burial no.
3. Square	4. Depth: from to
5. Associated zone	6. Intrusive from
7. Matrix	
8. Situated in	9. Covered by
10. Burial niche	11. Cist
12. Olla	13. Tomb
14. Associated features and objects	
.....	
.....	
15. Description	
.....	
.....	
.....	
.....	
.....	
.....	
.....	
16. Other data	
.....	
.....	
17. Type of disposal	18. General position
19. Orientation	20. Sex
	21. Age
22. Position of head	23. Position of body
24. Position of legs	25. Position of arms
26. Packaging and treatment	Box Bag
27. Drawing	By
28. Photo no.	By
29. Exposed by	
30. Recoeded by	
31. Date	
32. Commentary	
.....	
.....	
.....	
.....	
.....	
.....	

Fig. 12. The BAAR burial form.

CHRONOLOGICAL RECORD

PEABODY B. A. A. R.

1. Site number..... 2. Field sample number.....
3. Date collected..... 4. Collector.....
5. Description of sample.....
.....
.....
6. Geographic location of site.....
.....
7. Location of sample in site.....
.....
8. Association with feature and cultural zone.....
.....
.....
9. Packaging and treatment of sample.....
.....
..... By.....
10. Submitted for determination: (a) on
(b) to
11. Laboratory sample number..... from
12. Date determination received.....
13. C14 Date.....
.....
14. Commentary.....
.....
.....

Fig. 14. The BAAR specimens record form.

Fig. 15. The BAAR catalogue form.

had within them in situ tags for specimens wrapped in tin-foil. We also used color coded plastic bags for in situ special specimens (like soil samples) and for large or special artifacts and large ecofacts. If one filled out the color coded forms, one should have the total record straight. If necessary, it all could be fed into a computer memory bank which could lead to "off-color" conclusions! For students, I print these forms and hope they will devise better ones, but ours worked just fine.

Interestingly enough, we continually received compliments on these forms and our equipment from our Earthwatch Volunteers. Here was another aspect of our operation that worked out far better than expected. I had never done this sort of thing before and Earthwatch had never sent so big a group into the field before. I'm sure we were both apprehensive. I even hired a pair of coordinators because I wasn't sure whether we could handle the problems and do archaeology too. As it worked out, my coordinators not only turned off my students and the volunteers, but their militaristic letters even turned away money-paying volunteers. Fortunately, before the situation blew up, my coordinators walked out on me without even saying good-bye one Monday morning, and we had to handle the Earthwatch problems ourselves. It worked out perfectly, for suddenly with martial law gone, we got to know and work with these sincere Earthwatch people who payed to come and do archaeology under "Spartan" field conditions. They were great - good sports, hard working, eager, every group different. We loved every one of the 48 and hope they all come back and stay longer. I enthusiastically support the whole idea. It brings archaeology to the public notice and becomes a private source of funding, out of the hands of the Federal Government, but most importantly, we thoroughly enjoyed working with them.

And when I say we, I mean my staff and myself, and the former was the greatest success of the 1981 season. Particularly gratifying were the students - Linda Gifford, Julia Hendon, Hal Wilhite, Tom Emerson, Steve Usrey, and George Galasso as well as two temporary ones, Eve Danziger and Richard Callaghan from Canada. While there was administrative chaos and bad morale in the first week, the faithful six students as well as Ponciano Ortiz and I went off to dig at Guinea Grass - BAAR 19. Here they learned to work together, learned my techniques, learned how to record data in my system, learned to read strata, learned how to use our equipment, and in fact, became a real ball team. By the end of a week, still working without our impounded equipment and after endless discussions, trial and error, experimenting with digging and recording, we learned together.

There were demonstrations of how to map with Julia, how to photograph with Linda, how to take carbon samples with Tom Emerson and, of course, how to read stratigraphy with me - which at Guinea Grass was usually mixed and confusing. Thus, by the end of two weeks, we were trained on a site that we could not ruin. We also swam in the town swimming hole with endless visitors, and we became a skilled team with esprit de corp in spite of the administrative and personnel chaos and dissension we went home to each night.

Now we were ready for Betz Landing - BAAR 6 - to dig a site that previously had been adequately tested and to do some real archaeology and to train the local workmen. They did a great job on a real site. I left the field at this point to get Mary Dell going in the lab and get it coordinated with the excavations. I also prepared last season's survey materials for analysis. Mary Dell was another great student. All in all, we had nine good ones out of nine selections, an unbelievable average to come out of anthropology departments. In a short time, Mary Dell Lucas had the lab going great and was ready to train a volunteer who had been wished on us, Janelle Keith, who also ended up doing a good job in spite of no training and little interest in archaeology. I owe her a thank you for sticking with us and doing a good job under, what I know must have been very trying personal circumstances.

By mid-March, the archaeological team was ready, and even Jeff Wilkerson with our faithful helper, Jackie, had done some survey so we divided this topnotch digging team into two groups. Julia Hendon was in charge of the Betz Landing dig with George Galasso and Tom Emerson, some Earth-watchers and local labor. Ortiz, Hal, Lindy, and Steve went south to Melinda to dig a series of frustrating sites we never should have touched. I take full blame for this. At my age I should know better than to believe preliminary survey notes and set up major digs on sites I have never tested. However, the same high quality excavation techniques continued back at BAAR 6 in the north under Julia and at the fine stratified BAAR 35 under Steve Usrey. In the meantime, tests were made at the disastrous sites 84, 83, 62, 184, and 158 in the south, but our southern crew never lowered standards or lost heart, although they were forced to dig worse and worse sites for six weeks. I thank them and cannot but admire their spirit in the face of tenable archaeological circumstances. However, in spite of it all, we came out with skillful students and many trained local Belizeans who will be our cadre when we start the big digging next year. So, we are well prepared for bigger things in spite of everything.

We now have the rest of the team ready for next year.

We have coordinators for Earthwatch who not only are archaeologists but also who will be able to operate successfully out of one base. Our camp next year at Orange Walk will be managed by Shelly Tucker, and after last year's good start, all should work like a dream. Our lab, not only with Mary Dell but also with Toni Nelken back, helped by four or five Friends of the Foundation, situated in our beautiful Orange Walk setup, should operate very smoothly. Shelly Tucker will get our big camp going, thanks to our great landlords, Mary Ann and Bada. We will have our great household crew and our great cook, Aurora, back and a new administrator, Mara Cantor, who is an old China hand in Belize. Even Charlie Mitsecek should be able to start biological interdisciplinary studies and have an assistant to do floatation. We are ready to move forward, and we hope Jeff and Vicki will be back. Just for the record, we have included the table of organization for last year, 1981, and next year, 1982.

At this time, first and foremost, we would like to thank the Archaeological Commissioner, Harriot Topsey, who not only gave us our archaeological permit, but also gave good advice and was a visitor and friend in our camp. The permit, of course, was signed by the Minister of Trade, Industry, Co-operatives and Consumer Protection, the Honorable Guadelupe Pech, and we owe him a vote of thanks. As with the previous season, the Forestry Service looked after us like we were their own. Our camp in Melinda could not have existed without the help of Richard Belise, who again was a true friend, as was Andrew Arnold at the Savannah Station. We would like to thank them both. We are, also, especially thankful to their bosses, the Honorable H. F. Flores, Minister of the Department of National Resources and his assistant, Chief of Forestry Affaires, J. Rosado.

On a more local official level, we would also like to thank the Landrys who ran our favorite store in Orange Walk, and Cuello Brothers, who ran our favorite distillery, Lester Ramsey, our favorite carpenter, our very nice doctor, Dr. Nahlan Bhatt, who furnished us medical services, Mr. R. G. Whorlow of the Crown Company who gave us permits to use the new road, Mr. McFarlane, head of the sugar company, as well as many, many others. In fact, everybody on the local level was great, and this includes our best friends Mary Ann Boggess and Bada Hassin whom we can't possibly thank enough. Also, on this level are Gloria and David Lowe of Sand Hill who not only hosted our dig on their land but also were true friends.

TABLE OF ORGANIZATION

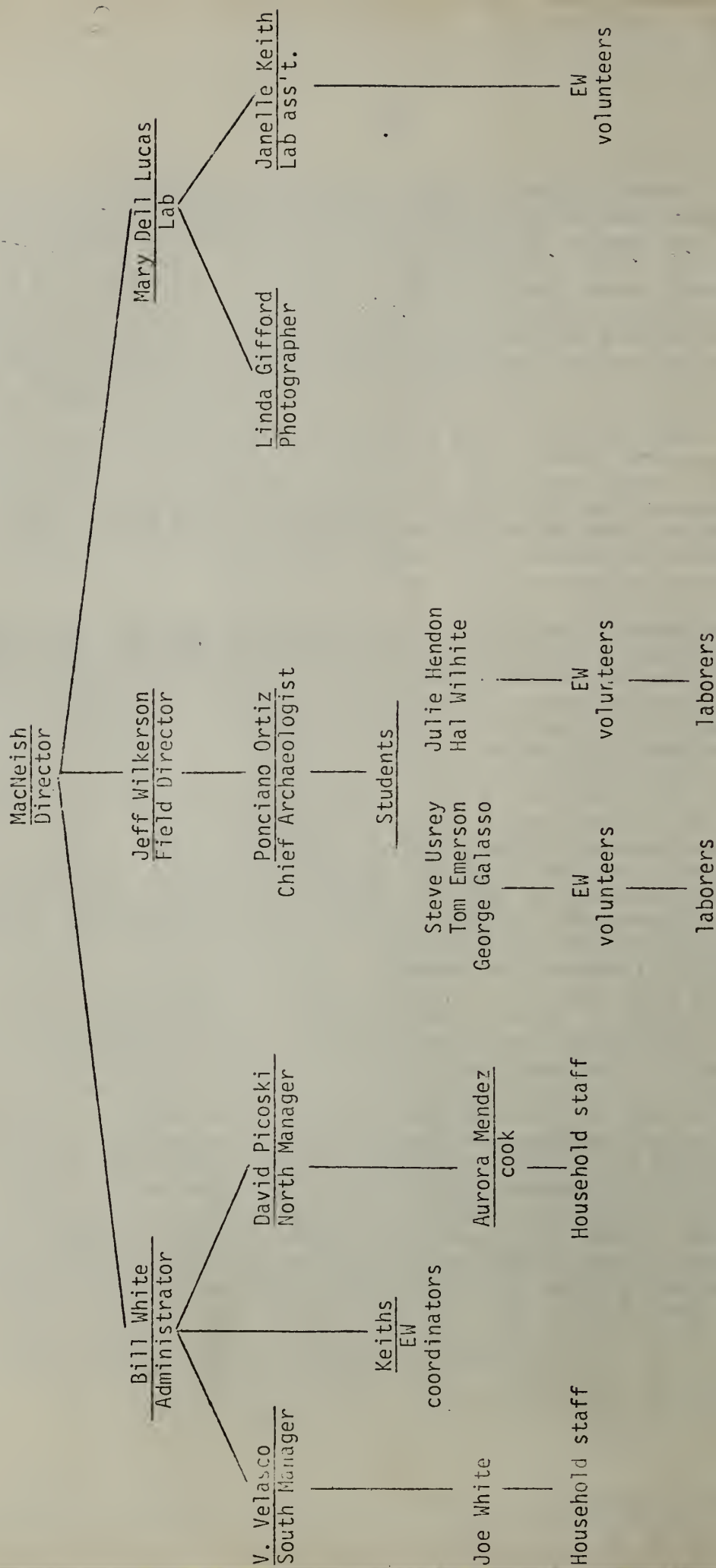
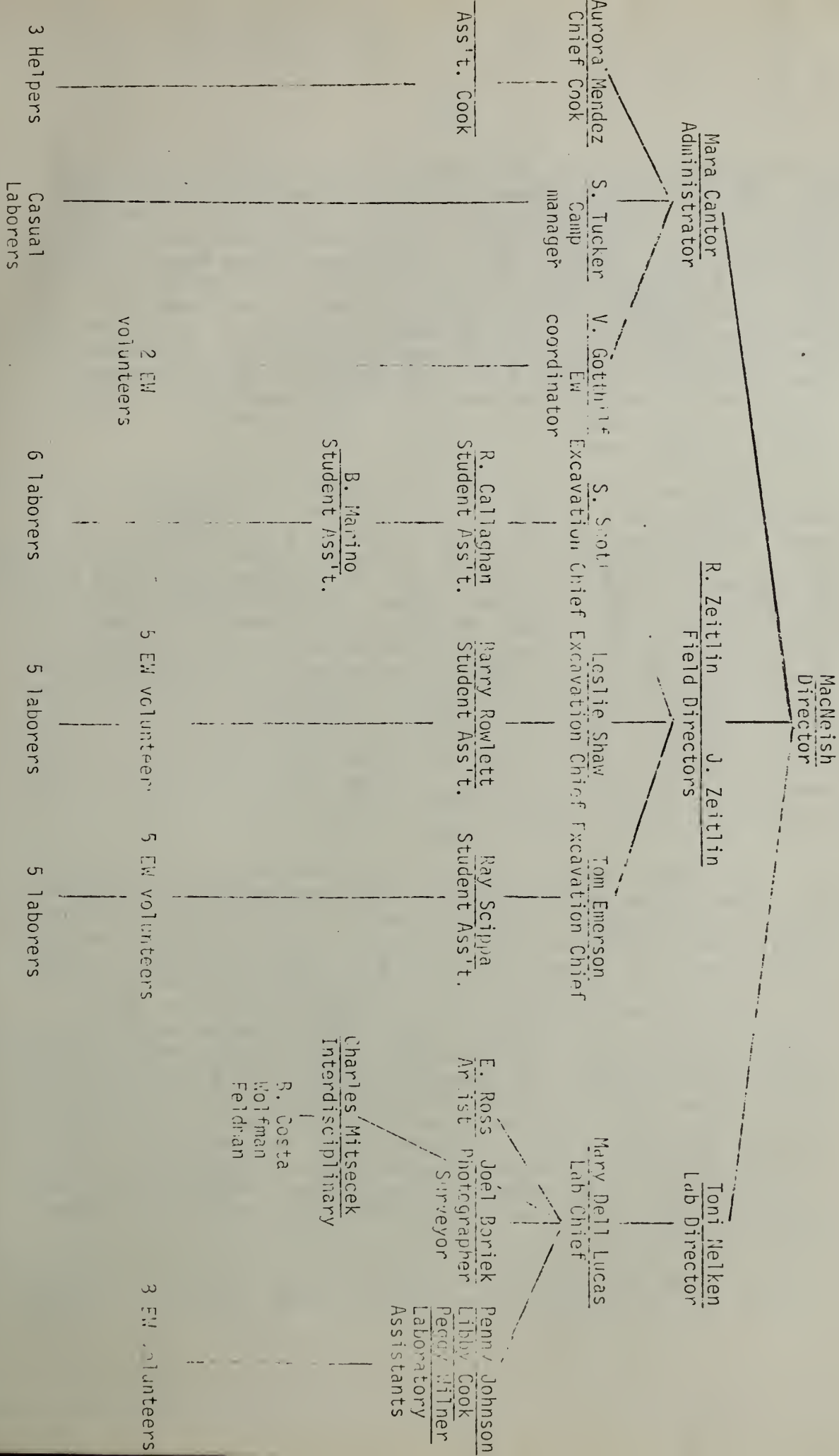


Fig. 16.

BELIZE #3 1982

TABLE OF ORGANIZATION



In Belize, Jorge Castille/ was again our friendly supplier, while William Keane/ told of sites and allowed us to survey them at Ladiesville. In addition to all these nice people whom we would like to thank, there were our faithful workmen from Progreso, Reggie Olivera, Jesus Corzo, Alfredo Villas, Alfonso Westby, and Andres Chi, as well as from Sand Hill, Worthington Borden, Maurice Leslie, and Hubert Guinage, and from Gales Point Dana Myrers, James Ramos, Norman Picart, and John Myvett. I cannot close this section on acknowledgements without thanking Aurora Mendez, our fabulous cook in Orange Walk, her helpers Adelia Roberts and Julia Lizama, and Clemantina Juarz, our cook in Melinda and our faithful Jackie Nugent, who was our handiest man.

Besides all these Belizian friends, we received help and advice from a number of professional colleagues, and we must thank them all. Some were visitors and others were working on adjacent projects. Visitors included Dr. Gordon Willey of Harvard, Dr. Mike Coe of Yale, Dr. Norman Hammod of Rutgers, Dr. William Sanders of Penn State, and Dr. Richard Adams of the University of Texas. Nearby us was Becky McSwain of the University of Arizona who was doing lithic analysis for the Cuello Project, Dr. David Pendergast and Elizabeth Graham Pendergast and their students working at Lamini, Dr. Tom Hester, Harry Schafer, Tom Kelly, Jack Eaton and their students working at Colha, Dr. Peter Harrison and Dr. B. L. Turner, Charlie Mitsecek and their colleagues and students doing research in Pulltrouser Swamp. It was great to have some archaeologists around to talk with, better than a formal conference and twice as stimulating.

Obviously, another group I must thank are my sponsors, Dr. John Yellen of the National Science Foundation and Mr. Brian Rosborough of Earthwatch as well as my own immediate staff. All of these I would like to thank. On the home front were Theo George, Suzanne Kip, and Kate Bennett who got the initial proposal ready for N.S.F. It was Sue Dadd who did the yeoman-like work of administering the grant while we were in the field, while Bette Steinert got the final accounting into N.S.F. In preparing the equipment in Andover and getting our bunch on the way were Joe Richard, Gene Winter, Fred Johnson, and Bob Forget. Obviously, my crew in the field are the ones I owe the most to and they are as follows: Jeff Wilkerson, Vicki Velasco, Bill and Joe White, Janelle Keith, Ponciano Ortiz, Mary Dell Lucas, David Picoski, Tom Emerson, Steve Usrey, Julie Hendon, Hal Wilhite, Linda Gifford, George Galasso, Richard Callaghan, and Eve Danziger.

All the Earthwatch volunteers whom I must thank individually are as follows: Ann Austin, Peter Boswell, Forrest

Bucher, Libbie Cook, Babet Corlik, Grace and Wally Connolly, Ed Dugan, John Fine, Debbie Gregson, Donald Hoeffel, Manny Kayman, Mary Moise, Nancy Rourke, Fred and Marie Sander, Beth Strong, Jeannette and Wilmer Tolle, Frances Bishop, Barbara Boden, Ann and James Carson, Susan Harris, David Hawtof, Joan Henricksen, George LeMaitre, Sharilyn Lemkuil, Ruth Levy, Anton Musladin, Charles and Neva Ochs, Linda Rebman, Mary Lou Rosczyk, John Turner, Peggy Wilner, Ann Bedford, Susan Davey, Penny Johnson, Gail Kamer, Haydee Johnson, Hugh Lacquement, Jim and Kitty Lou Pope, Barbara Resnick, Nancy Riojas and Babs Staniford. Thank you one and all!

THE INVESTIGATIONS

Now having thanked all those who did it, let us discuss in more detail just what we did; i.e., what archaeologically was undertaken. On the most basic level, we did more survey and now have over 220 sites. This is an increase from our original 160 found in the 1980 season. Of these 60 or so new sites, 161 to 186 and 203 to 220 were discovered in southern Belize by Wilkerson. These had few preceramic artifacts and were not catalogued in time to be included in our re-analysis of the survey materials, which was mainly done on materials from sites 84 to 160 that Nelken and I did not have time to analyze in the 1980 season. In fact, their inclusion in the first annual report was based on data from the field notes, not a study of the artifacts, and as I have pointed out, this was a mistake. However, included in our re-analysis were materials we picked up from sites 187 to 202, which were found in the Ladiesville-Sand Hill regions thanks to Tom Kelly of the Colhua Project. Here I cannot thank him enough for these very important sites that were the result of his many hours of difficult survey, and he was most generous in showing me most of these sites in our memorable twelve-hour day, which was fittingly described by one of the students who said, "Belize will never be the same again after letting those two old guys loose!" However, enough of this levity. Let me relate phase by phase just what we did find in survey.

From many standpoints, our knowledge of the Lowe-ha phase from survey changed very little, although we found three new sites near Ladiesville (BAAR 190, 191, and 192), and our artifact totals went from 58 to 112. Basically, the diagnostic traits seem much the same (see Table 1). The pre-dominant projectile points seem to be Plainview-like, El Inga-like unshouldered fishtail types, and Madden Lake-like shouldered fishtail points. It might be added that so far none of these have been found in our excavations.

This is, however, not true for our end scrapers - small stemmed (3), small snub-nosed (5), and small flake end scrapers (4), nor for our small crude blades - both pointed (2) and unpointed (16) and fine bifaces (4). All six of these types occurred in our lowest levels of excavations at the Lowe-ha site (BAAR 35) and were fairly numerous in the surface collections from other Lowe-ha sites. Large and small utilized flakes, choppers and bifaces, as well as a number of other types that carry on into later horizons occurred at one surface component or another, but only more adequate excavation will determine if they really belong to this complex or phase. In fact, it is obvious that more excavations are needed as well as the finding of better datable material.

Type Designation	Type No.	35W	191	100	190	192	158C	Total Lowe-ha Types	Unknown ?	Grand Total
Small blade, side utilized	N8					1			2	
Sole shaped end scraper	Es3						1		2	
Discarded scraper plain	Es8	1	1		1				3	
Triangular end scraper	Es7		1						1	
Projectile point fragment	pp?	6	11						17	
Crude scraper plane	Es6					2			2	
Flake end scraper	Es12						4		4	
Pointed flake	ss4		1				1		2	
Bifacial-core chopper	B4		2						2	
Small crude blade - prepared platform	N7		1						1	
Side retouched macroblade	N3		1				1		2	
Unmarked macroblade	N2	2							2	
Large ovoid endscraper	Es4	4							4	
Semi-lunar side scraper	ss3	2							2	
Coup de poing biface	B1	1							1	
End of blade scraper	Es15	1							1	
Thick crude biface	B2		1				2	3		
Demi-lunar chopper	B9						1	1		
Large laterally utilized flake	ss1	3	3	3	3	1	2	15		
Madden Lake shoulder projectile point	Pplb	3	1	1		?		6		
Small laterally used flake	ss2	1	2	1	1		1	6		
Pointed crude blade	N6	1				1		2		
Crude blade - unworked platform	N1	7	7		2			16		
Small snub-nose end scrapers	Es1	1	1	2	1			5		
Fine ovoid biface	Bo	2	1		1			4		
Small stemmed end scraper	Es2	2	1					3		
El Inga-like projectile point	Ppla	1	1					2		
Plainview-like projectile point	Pp2	1						1		
Totals								64	48	112

Table1 Lowe-ha - Correlation of surface sites and artifact types

In terms of settlement patterns, all our six sites still seem to be of relatively small groups (microbands) and all were located on sandy ridges with their pine forest orchard savannah vegetation. Two were near small streams and four were near sinkholes with water, but one sample is woefully inadequate. Obviously, more survey is needed.

Our survey data for the Sand Hill complex or phase continued to be the best represented in survey, and there are fairly large samples of artifacts from the surface, but there are still only a few from excavation, and the complex is still inadequately dated. From the 25 sites found in survey, there were 631 artifacts and most of them belonged to 14 or 15 trial types that define the Sand Hill complex or phase. The most numerous (397) diagnostic artifacts from the surface were the macroblades which had prepared rather than (narrow) unprepared platforms, unlike those from ceramic horizons. Of these, 171 were unworked, 160 were laterally worked or utilized, while 66 were terminally worked or utilized. As we shall see, many of these latter were found in excavation also.

Projectile points are also diagnostic of this phase. They are basically Pedernales-like with a wide concave base. There is also a Tilapa-like type having a convex base, but these were found at only five sites. A possible barb occurred in the middle levels of the Lowe-ha site.

Equally diagnostic were the large end scrapers (or adzes) such as the large ovoid types, the sole and snowshoe shaped adzes, or large end scrapers. Coup de poing-like bifaces and large semi-lunar side scrapers or knives are also distinctive of this phase. Flake end scrapers, Petaloid adze-like tools and mullers also start to appear in this horizon, and they carry on into later times. A number of other types occurred in limited numbers at one site or another, but as yet cannot be considered diagnostic. As we shall see, our preliminary excavations from BAAR 35 have uncovered a number of strata (B3, B4, C, and C1). Some of these are diagnostic as are some of our tests in BAAR 26 and BAAR 31, thus confirming our hypothetical Sand Hill complex. Much more good, solid digging and dates are needed before Sand Hill can be considered a reality.

Our survey data also hinted at some intriguing possibilities concerning the settlement pattern aspects of Sand Hill. Our number of sites jumped from 6 in Lowe-ha to 25 in Sand Hill, but six of the latter are great big sites, perhaps representing macroband occupations. Whether the population increased dramatically or whether the Sand Hill complex just lasted considerably longer than Lowe-ha or Belize is unknown as yet. This problem can only be solved when we have more

reliable dates for the complex. Another aspect of the settlement pattern that seems different from Lowe-ha is that one site is on a river terrace, one on a point in a fresh water lagoon (that at that time may have been a salt water bay), and six sites are on high points on the barrier bar to the sea (that probably were island sites during Sand Hill times). This means that these ancient peoples must have had some sort of watercraft at this time (perhaps some 8,000 years ago). Our woodworking tools on our inland sand ridge sites suggest that this is where they made their boats. It might be added that inland sites outnumber coastal sites 17 to 7. All the possible macroband sites are located on the sand ridge sites near sinkholes; so too are all the mullers hinting at wet season occupation when seeds were available. The lack of grinding tools at coastal sites also suggests that these may have been dry season occupations, perhaps for exploitation of marine resources. However, the few projectile points at both inland and coastal sites suggest hunting occurred at both seasons and locations. These clues suggest seasonal scheduling, and our future excavations will attempt to get fuller data on the matter.

While re-analysis and more survey helped with our tentative definitions of our first two complexes, it did nothing toward a better understanding of the Belize Stone Bowl complex. Re-analysis revealed there were only about 16 sites that could be reclassified as of the Belize Stone Bowl complex, and these had only about 156 artifacts. The diagnostic artifacts are, of course, the hemispherical and tecomate stone bowls, oblong stone dishes, short and long conical pestles, ovoid milling stones and mullers, perhaps the Trinidad-like projectile point and perhaps the crude scraper planes. As well, there were flake end scrapers, a stemmed bifacial knife, petaloid adze-gouges, and a host of other chipped stone tools that appear in significant numbers in components before or after this phase or complex.

All in all, I am most unhappy about the definition of this complex, in spite of the fact that some conical pestles and bowl fragments were dug up in the top levels of BAAR 35 and some stone bowl fragments were uncovered in zone A of BAAR 31. We tried to find out more about the Belize complex by digging at BAAR 84, but we were completely unsuccessful. So were our tests at BAAR 184. All in all, our definition of the complex is most inadequate, and our survey data not much better, for we found only one possible site within a coastal location, two large ones in a riverine position; the rest were on sand ridges - monotonously like the earlier complexes. Proportionally, the sites were slightly larger than previously - six possible macrobands and ten microbands, but with such a small sample, even this may not be significant.

		30													
		A													
		34	35e	193	194	158B	91	197	26	60	125	109	134	139	
Small blade unprepared platform	N7						1		11						
Leaf Point	Pp6														
Large thick ovoid biface	B6					1		1							
Triangular scraper plane	Es9								1						
Bifacial core-chopper	B4	1	1												
Anvil	G20					1									
Short conical pestle	G16								1						
Petaloid adze-gouge	Es5								9						
Crude scraper plane	ES6	2			1	1	1								
Stemmed bifacial knife	Pp11			1											
Muller	G10	1	1						1	1				1	
Flake end scraper	Es12				1	1			1						
Snow shoe end scraper	Es3a	1						1	2						
End retouched macroblade	N4	1		1		1	1		55	1		2			
Sole shaped end scraper	Es3	3		1						1					
Pednerales-like points	Pp3	1	2	1											
Side retouched macroblade	N3	3	1	7			1	1	127	2	1	1		1	
Side unworked macroblade	N2	3	1	3	1	4			134	3	1		1		
Large ovoid end scraper	Es4	5		2											
Semi-lunar side scraper	SS3	1										1			
Coup de poing biface	B1	1	1			1									
Large laterally utilized flake	SS1	3	2	1	2	15	3		26	3	2	1	1	2	
Small laterally utilized flake	SS2	4	6	x	x	x	x	x	14	2	2				
Thick crude biface	B2			2		1			1						
Madden Lake-like projectile point	Pp1b	1													
Pointed flake	SS4			1											
Crude blade unworked platform	N1			1	4	5									
Small snub-nosed endscraper	Es1			1		1		1							
End of blade scraper	Es15				1										
Small stemmed endscraper	Es2		2						1						
Demi-lunar chopper	B9			1											
Totals		32	17	23	10	32	7	4	384	13	6	5	2	4	

Table 2 - Sand Hill: Correlation of surface sites and artifact types.

146 52 189 31e 62 106 33 71 69 56 112 132

Triangular scraper planes	E9												
Small blade prepared platform	N8	1										1	
Projectile point fragment	Pp		3	2		1							
Small blade unworked platform	N7	1					1						
Large ovoid biface	B6												1
Hemispherical stone bowl	G2											1	
Anvil	G20		1										
Short conical pestle	G16			1									
Tilapa-like projectile point	Pp13		2	1									
Petaloid adze-gouges	Es5			2									
Crude scraper plane	Es6		1		2	2	2						
Muller	G10	1	1					2				1	1
Flake end scraper	Es12			1									
Snow shoe end scraper	Es3a							2					
End retouched macroblade	N4			1		1	1	1					
Sole shaped end scraper	Es3			1									
Pedernales-like point	Pp3		1	1	1								
Side retouched macroblade	N3	1	1	2	6		3	2					
Unworked macroblade	N2		1	3	5		1	4	1	1	2	1	1
Large ovoid end scraper	Es4			1	1			1		1			
Semi-lunar side scraper	SS3				2			1					
Coup de poing biface	B1							1			1		
Large laterally utilized flake	SS1	2	1	1	3								
Small laterally utilized flake	SS2				4					3	3		
Totals		4	6	13	24	3	7	12	5	5	6	4	3

Table 2 - continued

[illegible]

Totals 10 28 18 5 6 23 8 3 8 10 5 2 3 2 14 9

Table 3 - Belize: Correlation of surface sites and artifact types.

Further, we have no dates on this complex, so everything is very inconclusive. In fact, I occasionally wonder if the stone bowl sites are not industrial workshops for later ceramic horizons. Obviously, more investigation of this horizon is badly needed.

This is equally true for the Melinda complex or phase which re-analysis shrunk from 23 surface components to 13, all of them represented by most inadequate samples of collected artifacts (only 98 in total). The only artifacts from the surface that seem diagnostic are crude and discoidal scraper planes, discoidal choppers, large ovoid bifaces, net sinkers, Shumla-like projectile points, and perhaps triangular coup de poing hoe-like tools. As we shall see, the excavation at the Betz Landing site (although we found no Shumla-like points) did tend to confirm the existence of the complex, but again there were problems with the radiocarbon determinations. If this complex really does exist and is not some sort of fish camp station of ceramic times and if our survey site belongs to this complex, then a major shift has happened in our settlement pattern, for only eight of the sites are of microband size, while four are perhaps macrobands and there were perhaps two hamlets. Further, only three are inland on sand ridges with pine forest savannah vegetation, three were on a river, while the majority were coastal. Determining which of these coastal sites were oriented to the marine salt water resources or which to the fresh water lagoon resources remains to be studied. In fact, our proposed remote sensing program may assist in not only finding more sites of this seemingly coastal adapted complex, but also in collecting interdisciplinary data about the changing coast line that will allow for paleo-ecological interpretations pertaining to this hypothetical Melinda complex.

However vague the definitions of these earlier complexes may be, we at least have testible hypothesis about their existence. Re-analysis of our so-called Progreso complex as well as one unsuccessful testing (BAAR 83) near Gales Point lead me to doubt its very existence. Again, there is the need for more survey - with or without the aid of a remote sensing program. Once this is done, perhaps we can once again test and excavate some late preceramic components and define this complex.

Now let us consider what we do have for Progreso, bad as it may be. One nice large sample of 28 sites, upon re-analysis, shrunk to 15, all with few artifacts - 191 in total. Of particular significance were crude plano-convex, discoidal and triangular scraper planes, long keeled end scrapers, bifacial cores, leaf and perhaps stemmed projectile points, net sinkers and manos and metates.

		195	90	8	36	32	11	116	107	110	111	51	89	9
Long keeled end scraper	Es11					1								
Fine bifacial knife -	B8					2	1							
Discoidal scraper plane	Es8						1	1	?		1	2		
Net sinker large	G10a							1				1		
Net sinker small	G10		1	1	1			1	1	2	2	1	?	
Hammerstone pestle	G7					1						1		
Leaf projectile (?) point	Pp6	?				1						1		
Triangular coup de poing	B7	1		?		3			1					
Shumila-like projectile point	Pp5					1						1		
Large ovoid biface	B6	1	1	1	1	1	1					2	1	
Small discoidal chopper	B	1						1		1	1			
Triangular end scraper	Es7	1				3								
Milling stone	G8				1				?	1			1	
Short conical pestle	G16											1		
Blade cone	B3													
Petuloid adze-gouge	Es5			1		1								
Crude scraper plane	Es6	4	1	2	1	1	1		1			1	1	
Muller	G10						1							2
Bifacial core chopper	B4			1	2									
Side retouched macroblade	N3	2	1											
Thick crude biface	B2					1								
Large laterally utilized flake	SS1	1			1	2		3	1	1	2	1		
Small laterally utilized flake	SS2	2			1	2								
Small snubnosed endscraper	Es1	1												

Table 4 - Melinda: Correlation of surface sites and artifact types.

It might be added that all these so-called diagnostic traits also appear with Swazy and other ceramic horizons, indicating either continuity from the preceramic or the possibility that all these so-called Progreso sites are really aceramic sites of ceramic times. The general lack of fine obsidian blades, fine end of blade scrapers, small fine thumb-nail end scrapers or various kinds of other ground stone tools such as adzes and celts which usually occur with ceramic sites militates against this aceramic hypothesis, but it is a possibility, albeit not a good one. Another difference from ceramic horizons of this hypothetical Progreso complex is its settlement pattern. While there were two riverine hamlets or macroband sites like the kinds one finds in early ceramic times, the majority were hamlets or macroband sites on coves or points of land in salt or fresh water lagoons. There were also two sites on an island. Very rarely did we find any sites of this complex on the earlier favored location - the sand ridges.

Obviously, we need more survey, and there is some hope we may get that remote sensing program going. Not only will it assist with the finding of more late sites for excavation, but it should also give us vital ecological information about the changing environment and coastal resources. Of course, equally important is the ultimate excavation of both the new sites we might find and the better ones already known and tested. We made some attempts in this direction in the 1981 season, but our major excavation effort will be in 1982. However, even our first excavations were very important. So let me say a word about them.

The most important excavations to ready for an even more extensive program in 1982 was at the Lowe-ha site (BAAR 35) that we had tested in 1980. This 1981 testing was under the direction of Steve Usrey who was assisted by Tom Emerson, George Galasso and occasionally, Linda Gifford. They were also assisted by local labor and Earthwatch volunteers. In total, 29, one meter squares were opened and dug to a depth between one half and slightly over one meter deep. These supplemented the 10 we opened in 1980. In terms of the site and its stratigraphy, these tests fell into five groups. The largest one was in the southeast, consisting of squares S60E70, S90E20, S46E81, S40E40, S30E40, S47E67, S47E68, S46E67, S44E68, S20E70, and S10E80. Here we found a zone A over zone B, B1, and B2 over zone C1, C2, and C3. Most of our basic sequence was here, but the south group, squares S56E1, S30E10, and S50E20 added three other relatively late zones, B3, B4, and C. Our single center square S2E15 and S1E13, while it had zones A, B2, and B2, C1, and D did not have the fine B or C distinction. Our north group, squares

199 39 3 61 42 108 84 67 40 66 2 55 57 200

Mano	G			1	2			1				1	1	1	1
Paint palette	G			1				1							
Metate	G			1	1	1		1	1			1			1
Triangular scraper plane	Es9			2	2						1				6
Anvil abrader	G9			1	1										
Adze tranchet	Es10				2										
Progresso straight stemmed point	Pp7	?			1			1							
Fine chipper bifacial knife	B8	1			1	1							1		1
Discoidal scraper plane	Es8			1	2	3						1	1		2
Net sinkers	G18			1	1			2							
Leaf point	Pp	1		1	1			1							
Long keeled end scraper	Es11				1	2	1		1	1			1	1	1
Triangular coup de poing	B7				1										
Triangular end scraper	Es7			2	?					1					
Milling stone	G8				1										
Crude scraper plane	Es6			2	1			2				1	2	2	8
Muller	G10							1							
Bifacial core chopper	B4			16		4	2								3
Large laterally used flake	SS1			1	1			2		6			2		
Small laterally used flake	SS2			2	23	3	4			7	2	2		1	4
Thick crude biface	B2			1	1										
Small snub nosed end scraper	Es1			1											
Totals				3	31	53	15	8	8	4	16	5	6	7	23
Total		191													

Table 5- Progresso: Correlation of surface sites and artifact types.

N19W10, N20W10, N4W10, N30W10, and N30E10 had most of our zones, but lacked C, B4, B1, and B. However, here our number of artifacts was limited, but better than our northwest group which not only lacked most of our C zones, but also had few recognizable B zones and very few artifacts. However, in spite of these limitations which, of course, indicate where we will concentrate next year, we do have 11 stratified zones A, B, B1, B2, B3, B4, C, C1, C2, C3, and D with 256 artifacts in situ positions as well as about 3,000 chips and cores.

Although our sample is limited (and only one projectile point fragment was excavated in situ), we do seem to have some confirmation of our hypothetical sequence of complexes of artifacts from the surface sites determined by seriation. Zones C2, C3, and D yielded 53 artifacts, which seem to be of the Lowe-ha complex. These include small crude blades (N1) some of which are pointed (N6), flake (E12), snub-nosed (Es2), and small stemmed (Es1) end scrapers, semi-lunar side scrapers (Ss3), demi-lunar choppers (B9) and large bifaces (B1) as well as many thick and thin generalized side scrapers (Ss1 and Ss2). The sample of types is not large, but relatively distinctive and similar to the surface collection from 191, 100, 190, 192, and 158C, as well as 35.

Our sample of types from zones B3, B4, C, and C1 is not much more numerous than that of this complex, but 91 artifacts were found and seem to be of the Sand Hill complex. The major basis for this classification was eight worked macroblades (N2), 5 side worked microblades (N3), and 7 worked macroblades (N4), some of which are also macroblade turtle back scrapers, perhaps a new type. In addition, we uncovered the tip of a barb which might be a Pedernales-like projectile point, a coup de poing-like biface and one sole (Es3) and one snowshoe-shaped (Es3A) end scraper or unifacial adze. There was a hearth with charcoal which turned up in zone C1 of this complex, so eventually we may be able to get a radiocarbon determination that will give a better idea of the time period for the Sand Hill complex. It also should be added that both the center and southeast areas should yield fairly adequate samples during the 1982 season.

For the same reasons, the south area should give up more adequate samples of our middle complex - Belize. However, even now from zones A, B, B1, and B2, we did uncover 112 artifacts, including crude scraper planes (Es6), a short conical pestle (G16) a milling stone (G8), oblong (G3) and hemispherical (G2) stone bowls, a discoidal chopper, and two finely chipped keeled semi-lunar long end scrapers (Es11a).

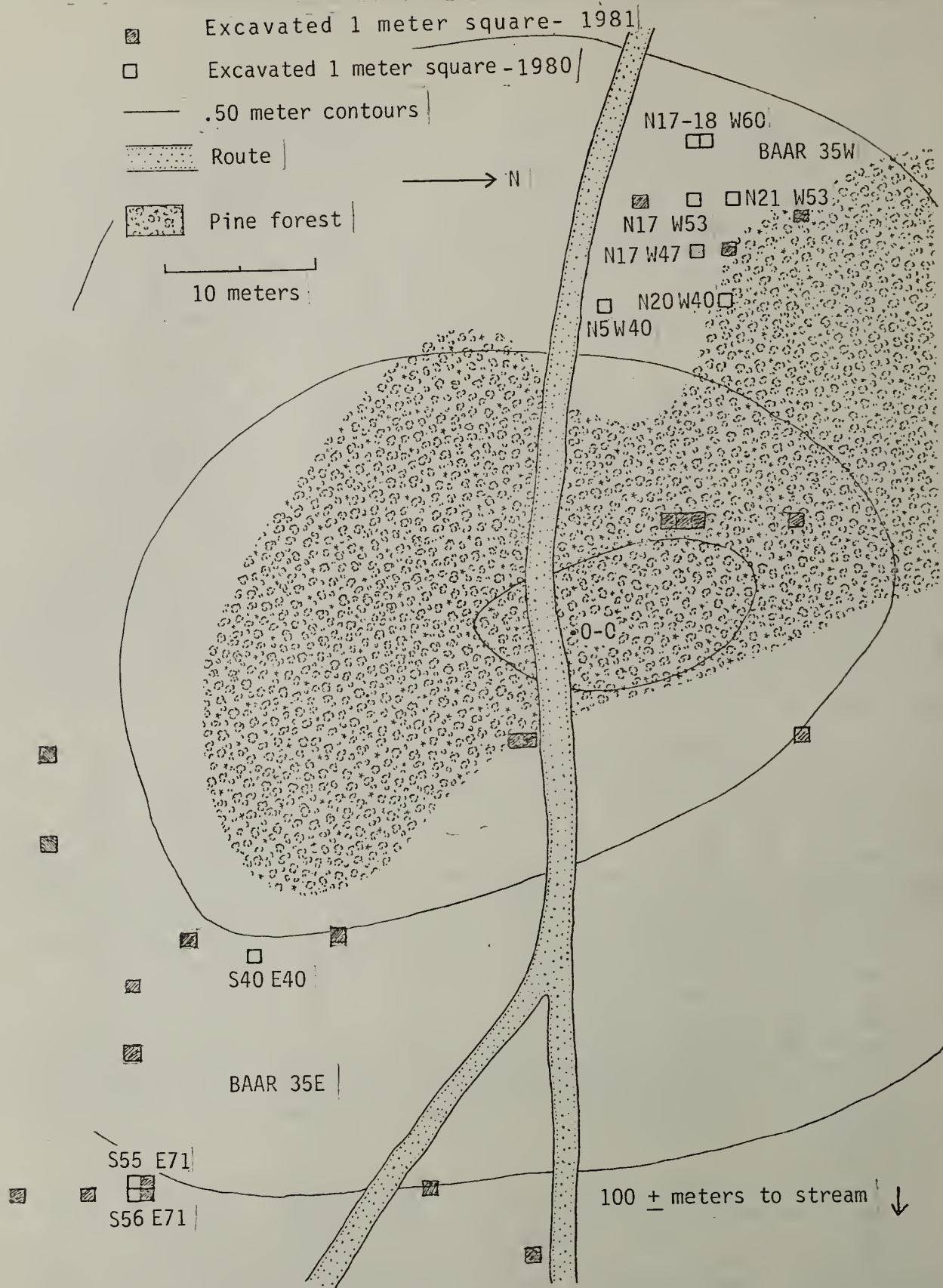


Fig. 18. Sketch map of BAAR 35 on Lowe Ranch with areas of 1980 and 1981 tests indicated.



Fig. 19. (upper) MacNeish and Ross excavating square S 556E 71 at BAAR 35E as seen from the east.

(lower) BAAR 35W as seen from the west.

COMPLEX	ZONE	TYPES																				Total
		SS2	N1	Es1	Es	SS	B	ES	N	B	SS	B	N	ES	Pp	N	N	ES	ES	G	B	
		12	1	9	2	6	1	3	2	2	3	3	3	4	3A	6	16	5	8	1	19	
Belize	A	3	2		13									1				1				2
	B	7	3		19						4							2		1	1	1
	B1	5			15						2			1	1			2	1			
	B2	10	4		12						2							4		1	1	
Sand Hill	B3	2	1		2						2								1			
	B4	1			1																	
	C				1																	
	C1	25	6		24						1	1	8	1	1	5	7	1				
Loweha	C2	11	3	2	1	8	2	1	3	1	1											
	C3				1																	
	D	2	1?		1	15																

Table 6- Sites by stratigraphic zone at BAAR 35 with cultural complexes indicated.

All in all, our tests at BAAR 35 - the Lowe-ha site - were a good start and promise much for the future in terms of giving us a good stratigraphic sequence of complexes or phases. Our other successful test was at the Betz Landing site (BAAR 6) and gave us very different information - specifically contextual and activity area data about the Melinda complex.

This site - BAAR 6 - was situated on the southeast portion of Progreso Lagoon on a terrace between 1.5 and 3 meters above the lake level. Progreso Lagoon is now fresh water, but there is a suggestion from the shells found that perhaps at the time of this occupation, the lagoon was a bay of the sea, for some of the shells are definitely from a brakish salt water habitat.

In excavation, our initial crew was under the direction of Pociano Ortiz and included all our students - Julie Hendon, Steve Usrey, Hal Wilhite, Tom Emerson, George Galasso, Lindy Gifford, Richard Callaghan, and Eve Danziger. During the final part of the excavation, part of the crew went to Melinda to dig, and during this time period, Julie Hendon was in charge with George Galasso and Tom Emerson as her assistants, as well as three or four local laborers and Earth-watch volunteers.

In terms of the general plan of excavation, after we had cleared the brush and set up a one-meter grid along the cardinal axis, we did a series of tests to determine the stratigraphy as well as the limits of the Melinda occupation. We initially put in two squares - S13W2 and S13W0 - south of the main deposit, one at W10 - west of the deposit, one at N13 and N13E6 well north of the site. From this, together with other tests, we determined that the major part of the deposit - zone C1, in which the Melinda complex artifacts occurred was bounded on squares N7, S5 and W5 - an area of about 35 to 40 square meters. We then carefully peeled off the strata in this area by digging first in alternate squares; after recording the data for each, we took out the in between, one meter squares.

Our stratigraphy was clear cut in the central excavation with a zone A - humus about 20 cm thick capping the whole site. Occasional modern European artifacts were dug up as well as three or four classic period potsherds. This overlay - a reddish brown stratum, about 20 to 40 cm thick had a few chips, some formative sherds - either Mamom or Chicanel - as well as a few fragments of charcoal that dated at 3230 BP \pm 85 (I 11900), and 3275 BP \pm 85 (I 11901). This zone overlay a sticky dark gray clayish soil filled with burned rocks and Melinda artifacts. It varied from 20 to 40 cm in thickness.

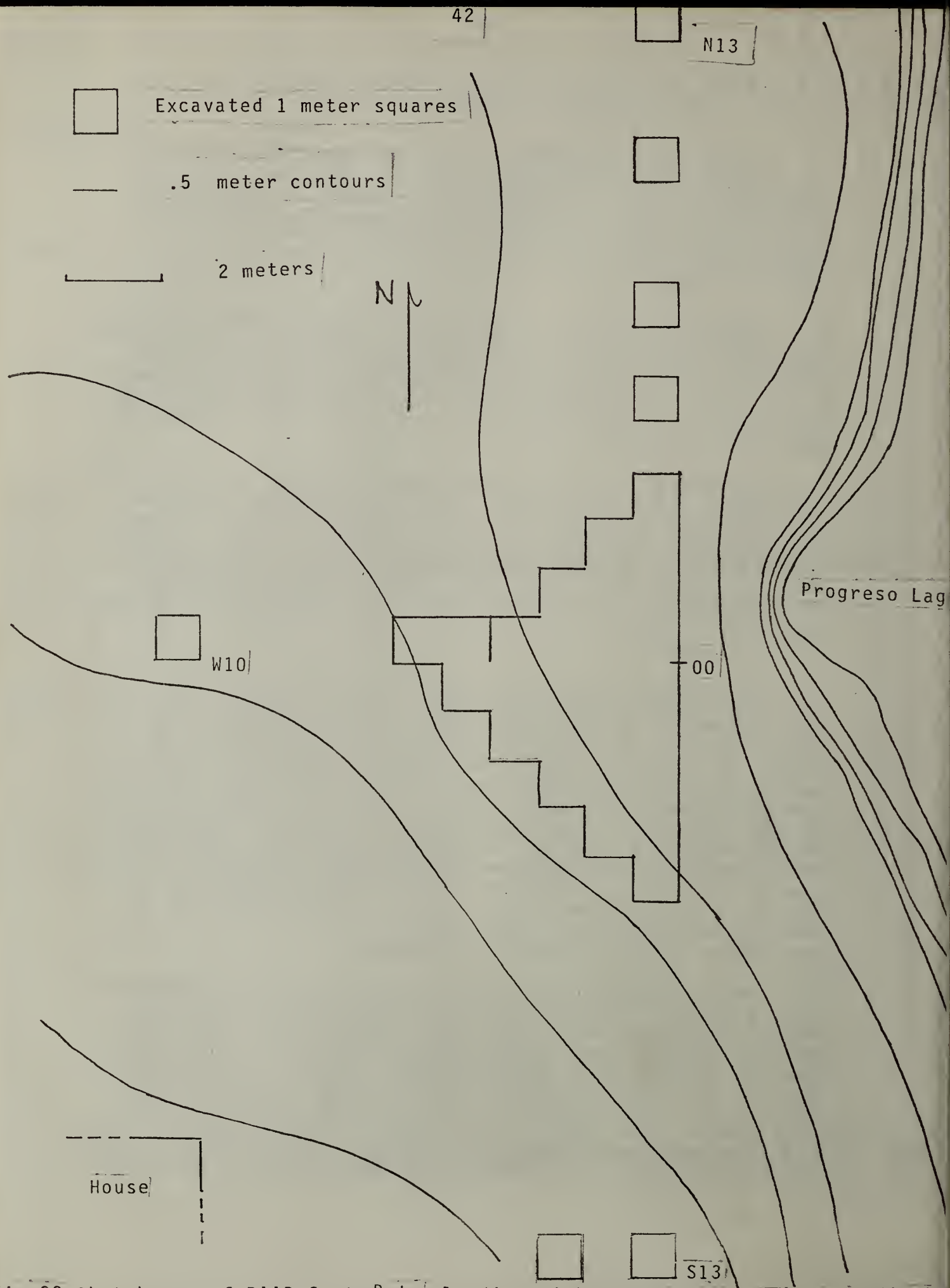


Fig.20. Sketch map of BAAR 6 at Betz landing with areas of excavation indicated

This zone C1, in turn, was over a light gray clay that was 40 cm thick - sterile of artifacts, and this gradually blended into the basic soil, a cream colored marl. The stratigraphy was clear cut, thanks to careful excavation, the neat profiles that were drawn, and it was photographed as well as studied and discussed by our group.

Because of these careful excavations and recordings, we were able to delineate activity areas. When these materials were brought to the lab and were supplemented with use wear studies, it gave us some idea about the way of life of the Melinda people during their brief stay at this site. Let me relate our findings and interpretations.

Once we laid out the artifacts from zone C1 on the lab table, it became immediately apparent that there were four clusters of artifacts - possible or hypothetical activity areas to be seen. Of these, the ones to the north and south were well separated from the others, while the two in the middle were adjacent to each other. To determine if these clusters were indeed activity areas, we set about classifying the tools or ecofacts of each, as to their general types with their possible general uses, and then restudied them under an 80-power microscope to determine use wear (microscopic polish, nicks, scratches, dulling of edges, and the like). We then compared these various use wear features with a number of similar chipped flint tools Mary Dell Lucas made and which we used in a variety of tasks. Although the results of our studies gave no final interpretations, let me indicate our tentative ideas.

Our southern-most cluster of tools came from squares S5, S4, S4E1, S4W1, S3, S2, and the southern-most part of square S1. In total, it might have covered about 12 to 15 square meters (if one counted the unexcavated portions towards the lake), but most of the artifacts (52 of 63), chips (91 of 133), and flakes (140 of 181) came from three squares S5, S4, and S4E1. A hammer, some large bifaces (that could have been cores) as well as the chips and flakes and a piece of burned antler (that could have been a flaker) suggest that one activity of this area was flint knapping. Some of the concentration of flakes and chips extended into the south part of area 2 and may mean that flint knapping took place in both areas, but not areas 3 or 4, which had few chips, flakes, cores, or hammers. Needless to say, there was little use wear evidence to indicate that a flint knapping activity actually took place, but this was not true of another activity of this area 1. Thirty-three artifacts of the 63 had evidence of use wear that showed that they

had been used against something hard - like wood or bone. While 22 of these are relatively nebulous worked flakes or chips, four of these are adze-like tools (Es3A, 5, and 6). There also were six bifaces, four with step fracture use wear on their ends, suggesting they all were used chopping against wood - perhaps the felling of trees or by blocking out large wooden manufactured products. It might be added that found besides these tools were three others - a large crude triangular biface, a Petaloid adze-like tool, and tranchet. These not only had step fracture use on them, indicating woodworking but also polish on their flat ventral surfaces, suggesting root digging. In this way, our final area 1 had three possible activities - woodworking, digging, and flintknapping.

These activities contrasted radically with those of the area just north of it in squares S1, S1W1, S1W2, and S2W3 and possibly the southeast part of S1W3. A large proportion of these 43 artifacts were unifaces. There were 38 - both large and small blade-like tools with little evidence of hard fractures or nicks on them, suggesting use on hard objects. Four had dulling and polish on them, suggesting work on softer materials. Since none of these are end scrapers which one might use on skin, I suggest that these tools were possibly used mainly in butchering or in the initial fleshing of animals, which is an activity radically different from area 1. One of the animals they were butchering must have been deer, for we found both a deer bone and a dry season antler. The net sinker in the north area may indicate they also prepared fish. In square S1W3, there was a burned area, and all squares were full of burned rock, suggesting that perhaps these soft butchered products (meat) were roasted on hot rocks. Land and marine animals and shelled species were apparently exploited.

Separation of this area from the one just north of it was made on the basis of the latter being full of tools with hard use wear on them rather than on spatial distribution, although the west end had a definite gap from the area to the south. This hypothetical area seemed to be mainly in squares O-0, W1, W2, W3, S1W1, W4, as well as N1, N1W1, N1W2, N1W3, and N2W3. There were still a few unifaces with neither work nor soft polish on them, indicating possible butchering or skinning activities. There were also a couple of hoe-like tools with ground polish, but the majority of the tools (26 of the 54) were unifaces with evidence of cutting, sawing or scraping something hard - like bone. We did indeed find a couple of pieces of burned sawed bone. Thus, they may have done bone working even though we did not find any bone tools. Besides this evidence of bone working, there were a series of end scrapers, scraper planes, adze-like

tools with scratches and polish on them - often on their dorsal surfaces, suggesting scraping or gouging something hard, such as wood. Thus, we would suggest that wood was scraped or gouged out in this area, perhaps to make dug-out canoes from the logs felled in area 1.

Area 4 in squares N2, N2W1, N3, N4, N5, N7, and N4W2 also had many (14 of 28) end scrapers or adze-like tools with evidence of gouging or scraping something hard, but half of these have polish or scratches on their ventral surface suggesting scraping something hard like wood or fibrous materials like agave leaves. Again, there are also a few flakes with evidence of hard wear use (cutting bone or wood) and as well there are a few with polish of the sort that could come from cutting or scraping something soft. Exact determination of the function of the tools is difficult, if not impossible.

However, in spite of it all, we do get a glimpse of the way of life in a Melinda occupation. The size of the occupied area of zone C1 and the limited number of tools suggest it was a brief occupation by a few people. Three post holes suggest a permanent occupation, but the lack of grinding tools and antlers suggests mainly a brief dry season occupation. There is a suggestion they survived on collecting shell foods and plants, as well as on fishing and hunting during this period. Perhaps they butchered their kill in the center, area 2, activity area, roasted their food; they may have scraped a few plant foods in the northern area 4 where they may also have worked the skins of deer and perhaps other animals. The hoes and bifaces with ground polish suggest they might have used root foods. The shells also suggest shell collecting and the eating of shell foods. The floated carbon material and pollen suggest that these fisher-folk probably did not have agriculture.

A key activity seems to have been woodworking, and the gouges in association with net sinkers suggest boat building, but post holes may mean they were also house building. There is also a suggestion of bone working and evidence of flint knapping.

We have, at least, made a start toward understanding the Melinda complex or phase. Obviously, we need more data and dates on this complex as well as similar type studies for all our other phases or complexes. The 1982 and 1983 seasons we hope will move in that direction.

Unfortunately, our other tests in the 1981 season were not as successful as these two excavations, and I shall only

briefly mention them before I sum up this season and talk about future plans.

One of the first sites - BAAR 19 - dug in the 1981 season was at the town of Guinea Grass beach on the north outskirts of town on the west bank of the western-most bank of the New River. From many standpoints, it was a training period for all our students and for Ponciano Ortiz our dig chief. Here they learned my terminology, digging techniques, ways of keeping records, and how to use cameras, alidades, and plane tables, etc. First, we put in a north-south 12-meter long trench on the eastern edge of the bank and stripped off soils or strata from a vertical face, recording horizontally and vertically every chip and artifact as we went along. We knew the humus in zone A had Chicanel potsherds in it and indeed excavation turned up a few classic sherds. Zone B had a gray clay we hoped was preceramic, but after a couple of days we found sherds in it too. Then three days later sherds turned up in zone C and finally in a disturbed zone D just above water level. It was a frustrating experience, but it was a great training period for our whole group working out of our north camp.

Next, after a relatively successful dig with the whole group of students at the Betz Landing site on Progreso Lagoon, we sent Ponciano Ortiz with two or three students south to Melinda to work on some interesting sites that Jeff Wilkerson had found in the previous season. These were even more frustrating than the Guinea Grass site (BAAR 19). The first one tested - BAAR 84 - was just south of the Gales Point soccer field and materials were found mainly along the west side of the road in some abundance. Initially, after making a contour map of the site and laying out a grid with 1 meter squares along the cardinal axis, we put a series of 12 random 1 meter tests in the site. Only two, about 100 meters apart produced artifacts. In the north area 11 squares were opened up using the alternate square technique, while 10 were dug in the southern area. Neither area had many artifacts. There were retouched non-diagnostic flakes in the north area, only a couple in the south, along with a few sherds. Occupations seem to have been very limited and brief, located on a few small hillocks or islands surrounded by low areas which were either swampy or had water in them. There just were not enough artifacts to make cultural determinations and there was no stratigraphy. So, after a few more sterile tests to the north of the site, we gave up.

Ponciano Ortiz and his students as well as Earthwatch volunteers then turned their attention to site BAAR 83. Here along the side of the road, Wilkerson and I had earlier

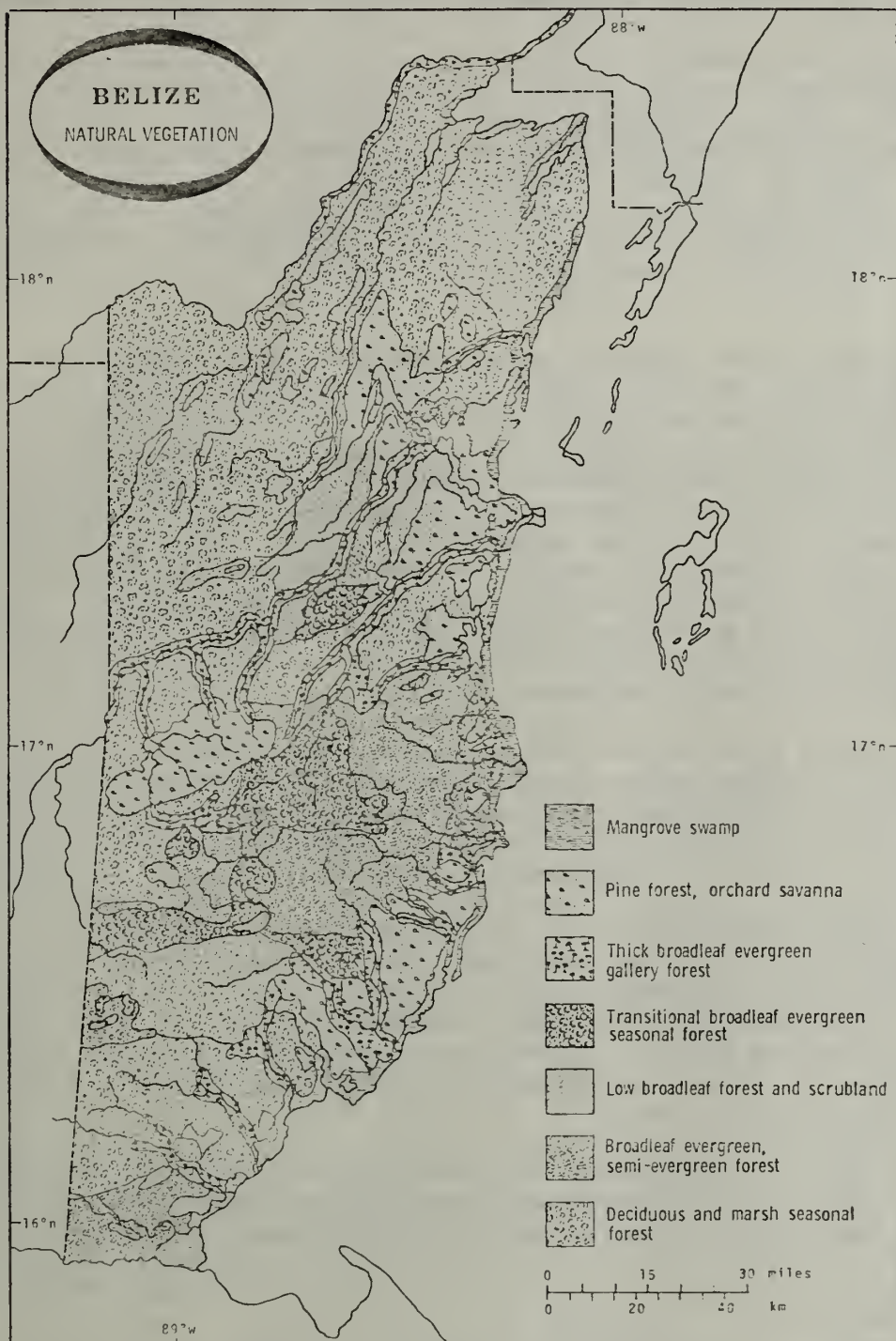


Fig. 21. General vegetational zones of Belize

found artifacts, including stone bowls. Positioned on a sand ridge on both sides of the road to Gales about 1 kilometer north of the turn off to Mullin's River Town, this site had not been tested, and the result was much the same as BAAR 84. About a dozen 1 meter tests to various depths of up to one meter revealed no stratigraphy. The few artifacts uncovered were not of any recognizable occupation layer. So, after a number of hot frustrating days, we also gave up on this one!

Site BAAR 184 was also located on a sand ridge, this time along the road in the center of the Forest Preserve about 3 kilometers south of Mullin's River. Again, on the surface we found stone bowl fragments, a long conical pestle a Trinidad-like projectile point, and various other chipped stone artifacts. However, again our one meter square tests revealed no reliable occupation level. Jeff Wilkerson, after he returned in April, took Ortiz and his group out to BAAR 62 on the south edge of the northern lagoon. In the water below this high point, macroblades of the Sand Hill type had been found. You guessed it, testing again revealed no occupational contexts!

The final frustrating tests were made in the site BAAR 158 on a sand ridge just south of the highway to Great Falls, north of Dry Creek. Here, after they scraped off the humus, there was a 20 cm deep layer of jumbled chipped stone artifacts, flakes, chips, cores, and the like in no definable occupational context. In fact, a glance at the artifacts seems to show that they come from a number of complexes or phases, suggesting that the original context had been disturbed. Thus, I end this sad story of our tests in the south. I guarantee, needless to say, that all sites to be dug in 1982 at Sand Hill, Sibun River, Lopez Creek, Betz Landing, or Ladiesville will have been adequately tested before we set up a project at any one of them.

Yet, in spite of all our field frustrations, our lab worked at full blast. We analyzed and classified almost all the materials of this season as well as reclassified some of the materials of 1981. In fact, our tentative sequence, with modifications still stands, and I shall describe it below.

Tentative Sequence of Complexes

Lowe-ha Complex - more than 7000 B.C.

Our earliest complex, Lowe-ha, is named in honor of Mr. David Lowe, who first showed us this site (BAAR 35) on his

land and allowed us to test it. As of now, we only know of five other sites that seem to belong to this complex - BAAR 100, 158C, 190, 191, and 192. These yielded about 73 artifacts from their surfaces. BAAR 35 yielded 39 artifacts from its surface, but its three stratified layers - zones D, C3, and C2 - gave an additional 53 in good contexts. Obviously, we need more excavated artifacts from definite occupational contexts, as well as associated ecofacts, features and dates. This we hope to get from our 1982 excavations at BAAR 191, 192, and again at BAAR 35.

However, even now we do have enough data to suggest the tentative diagnostic traits for the Lowe-ha complex. Perhaps the most diagnostic are the relatively small blades with unworked striking platforms. There were 16 on the surface of three sites, and four came from two of the three excavated strata. Closely related were the pointed blades. Only two were found at two surface sites, while three came from an excavated component. Almost as distinctive were the small snub-nosed end scrapers, either stemmed or unstemmed. Five of the later came from four surface sites and two excavated components; while two of the former came from two excavated components, and one was from zone C2 of BAAR 35. Fine thin ovoid bifaces were unearthed at three surface sites and one excavated component. These are rare or absent from any of our later components and so are distinctive of Lowe-ha. Demi-lunar choppers and semi-lunar side scrapers are also rather distinctive, but they appear in limited numbers from only a couple of components.

All these traits are found on the surface with a series of projectile points that have widespread early affiliations. None have been found in excavated components, so their inclusion as part of the Lowe-ha complex is hypothetical. One of these days (in 1982?) we are going to find examples in situ with the above mentioned traits. As of now, the most numerous points associated with this complex on the surface are the Madden Lake-like fishtail points with definite shoulders. Six appeared at 5 surface sites. Only two El Inga-like fishtail points with rounded shoulders occurred at two components; while a base of what appears to be Plainview points came from the surface of BAAR 35.

The other point which may belong to this complex was found on the surface of BAAR 191 by Tom Kelly. He, as well as Hester, Kelly, and Ligabue (1981) have commented on its resemblance to Clovis points and its possible relationship to other 9,000 to 11,000 year old complexes in Central America.

Other types appearing with this complex are less distinctive

Fig. 22. Lowe-ha Complex artifacts

1. El Inga-like point (Pp1a)
2. Madden-like point (Pp16)
3. Crude blade unworked striking platform (N1)
4. Pointed blade (N6)
5. Plainview-like point (Pp2)
6. Madden Lake-like point (Pp16)
7. Crude blade (N1)
8. Fine Ovoid biface (B)
9. Small stemmed end scraper (Z52)
10. Large laterally used flake (ES1)
11. End of blade scraper (ES 1)
12. Small snub-nosed end scraper (ES1)
13. Thick crude biface (B2)
14. Large anvil end scraper (ES4)
15. Coup de poing-like biface (B1)



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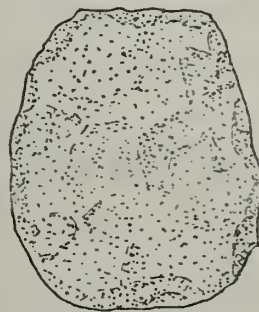
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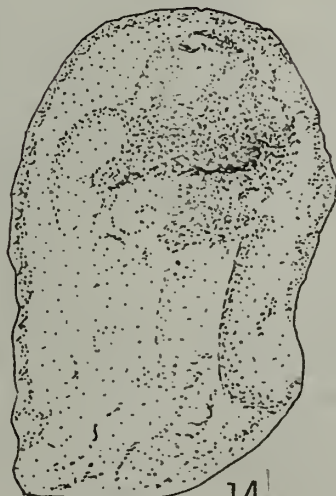
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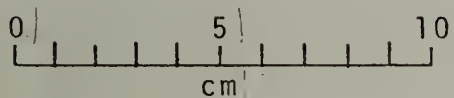
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	Lowe-ha	Sand Hill	Belize	Melinda	Progreso
Hamlet on island					40
Hamlet on lagoon cove					2
Hamlet or macroband					84
on point in fresh				107	3
water lagoon					
Macroband estuary				36	39
island					67
Microband on cove of				6	
fresh water lagoon					57
Hamlet macroband shore					
cove					53
of salt water lagoon				90	61
Macroband fresh water					
lagoon					108
Microband on island				116	
in river				11	
Microband on point		109	164	110	66
				111	
on fresh water lagoon			196	195	
Microband estuary		106 69			
		62 56		51	42
Island		52			
		91			
Macroband sand ridge		26 31c	31N		
		193	26S	89	
Near sink hole		189	184		
		158	54		
Macroband river		71	103	8	200
terrace			124		77 ???
Microband sand ridge 190,191		134			
		194 132	105	32	
near sink hole 192,158		197 112			198
		34 33			199
Microband sand ridge	100	139 146	88 160		
		60	126 157		
near stream	35w	125	83 59	98	
		35	148		
Totals	6	25	16	14	15

Table 7- Correlation of sites by phase and possible ecozones.

and include: crude bifaces either pointed (the so-called coup de poing-like tools) or ovoid; large crude plano-convex end scrapers; flake end scrapers; and large thick and small thin laterally worked unifaces.

Translating these chrono-types into reflections on human activities, one might speculate that these people were hunters who scraped skins, butchered their kill, did flint knapping and engaged in some woodworking. The size of their occupations and the thickness of components also suggests that they lived in small groups and stayed in no spot very long. In addition, all sites are on sand ridges with pine-savannah vegetation, and obviously this was their preferred settlement area.

The complex is not well defined, but at least we have made a start. Some of its tools are in good early stratigraphic complexes. Comparisons suggest the complex is early, but we need some real dates.

Sand Hill Complex - 5500 B.C. to 7000 B.C.

Our second hypothetical complex is much better defined, but still far from complete. Not only have 25 surface components been discovered that yielded 631 artifacts, but zones B3, B4, C, and C1 from BAAR 35 gave up 191 artifacts, while our test in 31W in zone C1 produced 6 artifacts. Then too, the excavation of zone B at BAAR 26 (also, in 1980) uncovered another 44, 25 of which were found and recorded in situ. The dominant trait of all components consists of the huge macroblades, many of which are end and/or side retouched or are heavily worked. They were certainly struck off huge conical cores.

New and different and diagnostic are the large end retouched unifaces either sole or snowshoe shaped that very well could have served as adzes, and there were actually 11 petaloid adzes at 2 sites. Perhaps the flake end scrapers, large ovoid end scrapers, and crude scraper planes served as scrapers too, but even so, they are all very different from the earlier snub-nosed types. However, coup de poing bifaces, semi-lunar scrapers, thick bifaces, and thick and thin laterally worked unifaces do continue. The projectile points are now mainly like the Pedernales type, although two have convex bases which seems to suggest they evolved out of the earlier fishtail varieties. Even so, they may represent a new kind of hunting technique. Also new in the subsistence line is the finding of mullers at many sites. There is no doubt that we have a new complex - called Sand Hill - with a new congeries of artifacts which overlies stratigraphically, and

Fig. 23. Sand Hill Complex artifacts

1. - 2. Pedernales-like points (Pp3)
3. Sole shaped end scraper (E53)
4. Snowshoe shaped end scraper (E53a)
5. Coup de poing-like biface (B)
6. Thick crude biface (B2)
7. Gouge (ES5a)
8. Petaloid adze-gouges (ES5)
9. Large ovoid end scraper (ES4)
10. Macroblade end and side retouched (N4)
11. Macroblade end retouched (N4)
12. Macroblade side retouched (N3)
13. Muller



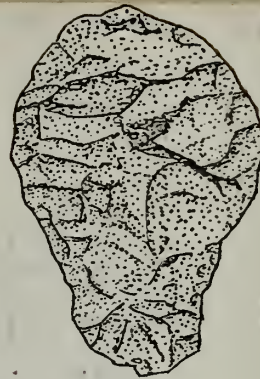
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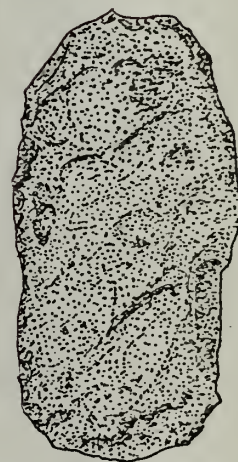
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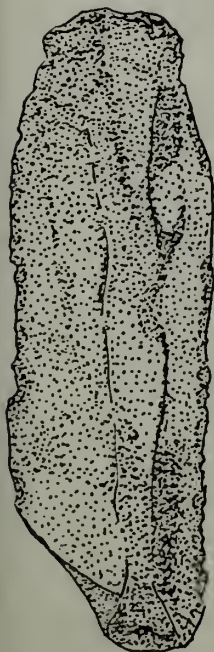
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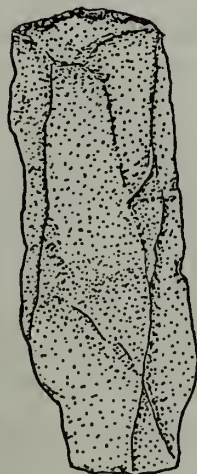
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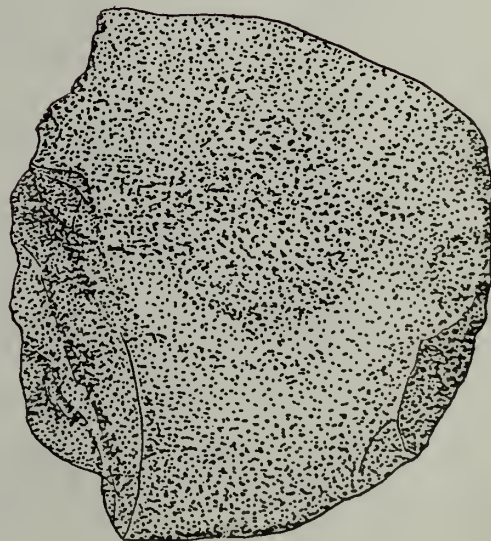
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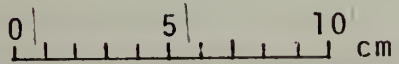
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follow the Lowe-ha complex.

However, it was just not a new set of chrono-types that came in, but they reflected the development of a whole new way of life. The projectile points, of course, do indicate that hunting continued, but the scraping planes and mullers suggest that by Sand Hill times, plant collecting was a major aspect of their subsistence system. The locations of 7 or 8 sites on islands and in marine or riverine locations also are clues that they had learned how to exploit aquatic resources with boats. Just what their coastal adapted subsistence system was in detail remains to be worked out. While food was prepared and animals butchered in much the same old way, they used a new set of heavy tools and perhaps new techniques to prepare skins. Exactly what they did is a problem for future research. The shift from making small crude blades to making huge macroblades certainly involved a change in their flint knapping techniques. Some of these huge macroblades (with heavy end and side wear) suggest a whole new woodworking industry. Some of the side worked macroblades may have been used as spokeshaves, shavers, or rasps; while the use-wear on some of the end worked macroblades suggests wood scraping or gouging. The sole and snow-shoe-shaped unifaces also could have been used in a similar manner. As well, they might have been hafted to be used as wood adzes or celts for cutting down larger trees. In fact, we did find some petaloid adzes. While the Sand Hill people may have made a host of wooden tools, small and large, many suggest boat building. Confirming this hypothesis is, of course, the fact that some sites were on islands, which only could have been reached by boat, or possibly by a very long swim by family groups - a hypothesis I think most improbable!

This brings us to another aspect of Sand Hill that is very different from Lowe-ha; namely, its settlement pattern. First and foremost, the number of sites had jumped from 6 to 25, and the size was much larger than any of Lowe-ha - perhaps some were macroband encampments. On the other hand, 12 Sand Hill sites were still small and were located on sand ridges near shorelines or sink holes. Even here, there were 3 big ones in these locations. The others were in places where we have never found Lowe-ha sites so far. One (the Ochon site) was found eroding out of a river bank of the Sibun. Another was a small site on a point in a fresh water lagoon, and the other 6 were in estuary situations in salt water, and most of these locations were probably islands in Sand Hill times. Our Sand Hill peoples were gradually going down to the sea, and there is the possibility they are ancestral to the earliest peoples in the western Antilles, such as Aqua Verde, Morden, and Couri.

Future excavations should tell us much about these movements as well as giving us greater evidence of seasonality. Obviously, some more reliable system of dating these complexes and better contextual data are needed, but our plans for the 1982 season could well solve these problems by revealing information about the way of life of the Sand Hill people. The best is yet to be!

Belize Complex - 5500 B.C. to 4200 B.C.

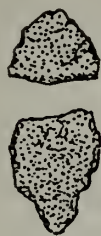
As mentioned previously, the re-analysis of Wilkerson's materials from surface survey greatly diminished our sample of sites (from 20 to 16) as well as changing the definition of these complexes. However, the top two zones (A and B) of BAAR 31 tested in 1980, and the 1981 tests in BAAR 35 suggested that the top zones, A. B. B1, and B2, were of this complex. Obviously, the most diagnostic of this complex were the stone bowls. Nineteen hemispherical stone bowls were found at 9 surface sites, with 3 from the excavation of BAAR 31 - Lowe Pond site. There were 12 oblong plates from 8 sites, and one from zone B of BAAR 35, and one from zone B of BAAR 31. Large tecomate shaped examples were less easy to recognize and to find. There were six from as many sites, as well as one each from excavations at BAAR 31 and BAAR 35. Possibly connected with these bowls or mortars were short and long conical pestles (6 and 7 respectively being found at surface site 5), while two came from excavations at BAAR 35. Closely related to these are the mullers and milling stones, with 12 small ones occurring at 6 and 8 sites respectively - 24 in all. It is perhaps significant that none were found at our only coastal site, but were found only at our inland sandy ridge sites. This suggests some sort of seasonal scheduling - with people living inland grinding seeds in the wet season, and moving to the coast or rivers in the dry season, when the high caloric seeds were no longer available.

To the above traits, anvils might be added, meaning that this complex is mainly represented by ground stone tools. This data is the basis for the statement by one of my colleagues that this complex probably is just the aceramic ground stone industrial complex of ceramic peoples. Perhaps future excavations may find this to be true, but I think not, because we did find both a Trinidad-like and a San Nicolas-like point, and as well: scraper planes, petaloidal adze-gouges, and in the earlier sites, macroblades of the sort that do not occur in any ceramic sites we know about.

Saying very much about the way of life of these Belize stone bowl peoples on the basis of site collection is very

Fig. 24. Belize Complex artifacts

1. San Nicolas-like point (Pp⁴)
2. Thick crude biface (B2)
3. Discoidal Chopper (G16)
4. Crude scraper plane (E56)
5. - 6. Petaloid adze-gouge (E53)
7. Bifaced core-chopper (B4)
8. Triangular coup de poing-like biface (B7)
9. Sharp conical pestle (G16)
10. Milling stone (G8)
11. Tecomate stone bowl (G1)
12. Hemispherical stone bowl
13. - 14. Oblong stone dish



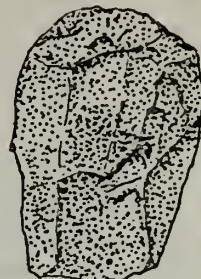
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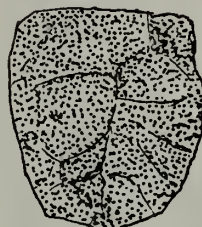
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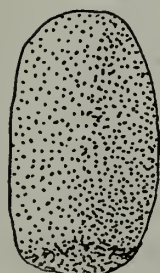
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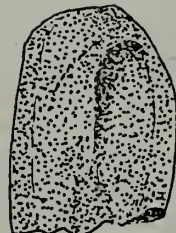
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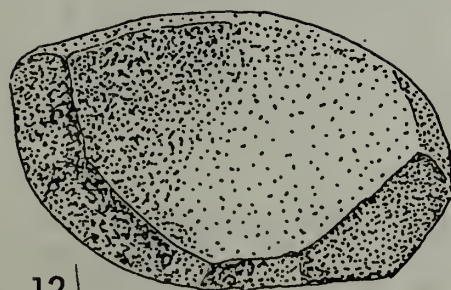
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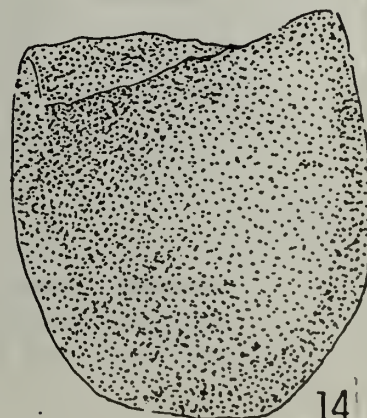
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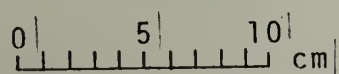
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limited excavation is most tentative and unreliable. There is, however, the suggestion that hunting is on the wane and that plant (seed) collecting is on the rise. There are as well further maritime subsistence adaptations. The four sites near the sea suggest seasonal scheduling and a further shift towards adapting to that coastal area. Obviously, the ground or pecked stone industry was new and distinctive, but even the flint knapping industry (with its lack of macroblades) seems to have changed. There was little evidence of butchering or of skin working, but both probably occurred, while the wood-working industry continued. What else they did is so poorly documented that further comment is unnecessary.

In fact, this complex is very poorly defined, its stratigraphic position is not good, it is undated, and only vaguely can it be related to a highland complex-like Coxcatlan which also has a stone bowl complex. However, our plans for 1982 call for testing over a half dozen components of this complex, so hopefully this situation should improve.

Melinda Complex - 4200 B.C. to 3300 B.C.

If the excavations at Betz Landing - BAAR 6 - are reliable and if the complex of tools (205) in total) in zone C1 is preceramic and if the C14 dates pertain to the overlying deposit, then the Melinda complex probably does exist. However, one could never define it very adequately on the basis of the 98 stone tools from the 14 sites found in survey. Large scraper planes, often well-made and discoidal; small and large well-fashioned discoidal choppers; large ovoid bifaces; triangular end scrapers; triangular coup de poings or hoes; milling stones, and mullers; small and large netsinkers, and Shumla-like points were the diagnostic types found mainly on the surface. Everything but the netsinkers and points occurred in the Betz Landing excavations. The diggings did, however, add a number of types not found on the surface. These included: adze tranche-like tools; triangular scraper planes; unifacial drills; spokeshaves; small snowshoe or stemmed end scrapers that could have been used as adzes; and a number of small worked crude blades. Obviously, more excavation is needed to better define the complex, and we hope to get some carbon for dating. Some of this will be done by extending our excavation at BAAR 6, but we need to find more good sites for excavation after more survey.

In terms of activities, these people were rather different from their predecessors. Of course, the points and scraper planes, and the grinding stones suggest that some hunting and plant collecting continued. The hoe suggests

root plants being utilized, and the netsinkers suggest various kinds of fishing. Butchering and skin working continued, but there now seems to be a new woodworking complex, using a whole new tool kit. Boats and houses were probably built, and ground stone tools made, but the latter were made differently from those of the Belize horizon. The biggest difference from previous horizons, however, is in the Melinda complex settlement pattern. We have a couple of big sites that could represent permanent hamlets, or very big macrobands. Macrobands (6) are almost as numerous as small microband sites (8).

However, the biggest difference is that rarely are there sites inland on the sand ridges (3), and that most are coastal - either in salt water (3) or fresh water lagoons (5), or in riverine locations (3). This shift in site location was undoubtedly connected with some sort of changing subsistence system, but as of now, we just do not have enough data to understand what it was or how or why it happened.

So much needs to be done before we can describe, date, or understand the Melinda complex. It is obvious that this complex represents a major shift in the way of life of the ancient Belizeans. Proposed excavations in 1982 in sites of this period may help, but we just need more survey, perhaps using remote sensing techniques to find better sites for excavation.

Progreso Complex - 3300 B.C. to 2000 B.C.

As mentioned previously, the re-analysis of surface materials plus our two or three unsuccessful tests of sites reputedly belonging to this so-called Progreso complex gave rise to considerable doubts about the existence of such a complex. In fact, all we have are some 191 artifacts from 15 not very productive sites. Certain types do, however, occur repeatedly and may define the complex we call Progreso. Of particular significance seem to be manos, metates, triangular scraper planes, fine bifacial knives, Progreso stemmed and leaf projectile points, discoidal and crude scraper planes, bifacial choppers or cores, and long keeled end scrapers. As has been noted, some of these traits appear in Melinda, and most of the types also occur in early ceramic horizons - albeit in very different proportions. Whether this means these sites are ancestral to the later ceramic ones or merely specialized ceramic sites of ceramic peoples is unknown at present. I suspect it is not the latter, but solid stratigraphic proof from good contextual

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Fig. 25. Melinda Complex artifacts

1. - 2. Shumla-like points (Pp5)
3. Triangular end scraper (ES7)
4. Finely chipped biface knife (B8)
5. Hammerstone pestle (G7)
6. Small discoidal chopper (B5)
7. Pebble net sinker
8. - 11. Discoidal scraper plane (ES8)
9. Triangular coup de poing (B7)
10. Large ovoid biface (B6)



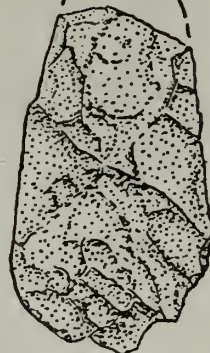
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3



4



5



6



7



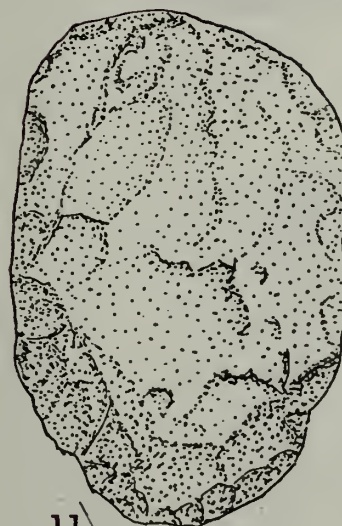
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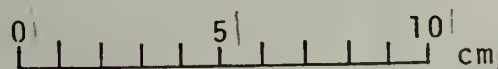


Fig. 26. / Progreso artifacts

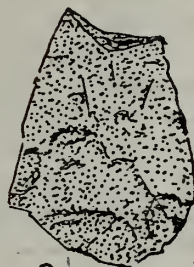
1. Progreso stemmed point (Pp7)
2. - 4. Leaf point (Pp6)
3. Finely chipped ovoid biface (B8)
- 5, 6, 7, 12A. Small discoidal scraper planes or end scrapers (E8)
8. Long keeled end scraper (ES11)
9. Triangular scraper plane (ES9)
10. - 11. Adze tranchet (ES10)
12. Triangular end scraper (ES7)
13. - 14. Scraper plane (ES6)
15. Anvil abrader
16. Metate (G4)
17. Mano (G12)



1



2



3



4



5



6



7



8



9



10



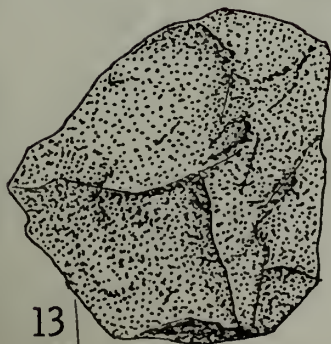
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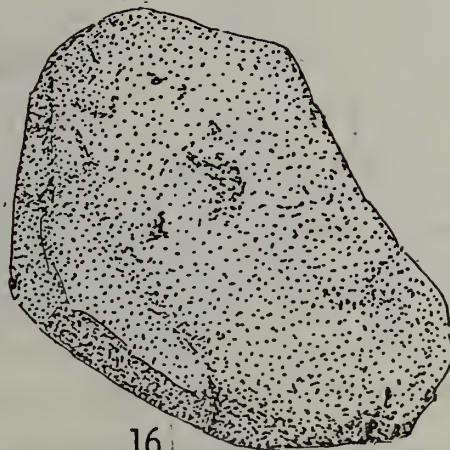
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0 5 10 cm

excavations is lacking.

Generally speaking, the site locations are different from the early ceramic ones which are often riverine. However, two riverine ones exist and two are on various salt or fresh water locations near the sea. Generally speaking, they seem larger than the earlier sites, but again a sample of only 15 sites is most inadequate.

Obviously, much research is needed in this crucial complex which is perhaps transitional from preceramic to ceramic and which pertains to the period when the village agricultural way of life came into being in the Maya lowlands. We shall certainly look for better sites of this hypothetical complex for excavation in the 1982 season. Perhaps a remote sensing program will help here too.

Conclusions

We have reported what we did in the 1981 season. From many standpoints, this was a season to get us ready for bigger things in 1982. We now have trained personnel, have added additional trained staff, have a fine laboratory facility, good lab people, and excellent equipment. Further, we have tested a number of stratified sites: BAAR 26, 31, 35, 71, 6, 191, 192, 193, 158 et al. - which should give us good stratified materials for most of our complexes. Further, we have the resources, both financial and scientific, to do major excavations in the 1982-1983 seasons. In fact, we are raring to go, and our esprit de corp is high. So, the best is yet to come, and I close with a brief summary and a sequence of charts written for the first annual report. This coming year, with the big push, much or most of the conclusions of this report will change, but this is "where we are at" so far.

Summary

Based on limited soundings in three or four stratified sites, seriation of surface collections, and cross-dated lithic styles, we have delineated a sequence of five preceramic phases, perhaps spanning the period from 9,000 to 2,000 B.C. Tool types and site location data imply a different type of lowland adaptation from that found in the highlands during the Mesoamerican Archaic. The preliminary phases and suggested exploitative patterns are as follows:

- a. Lowe-ha complex (ca. 9,000 to 7,500 B.C.).
This early date is suggested by cross-dating

of Lowe-ha keeled end scrapers and blades with similar artifacts from Loltun Cave in Yucatan, where fishtail and Plainview-like projectile points were part of a lithic assemblage associated with remains of horse and other extinct fauna. In Belize, small Lowe-ha camp sites are located on sand ridges whose characteristic savannah vegetation would have supported large game animals favored by nomadic hunting and gathering groups at the close of the Pleistocene.

- b. Sand Hill complex (ca. 7,500 to 5,500 B.C.). Site location data indicate a new economic orientation of Belizean population following the diminuation of Pleistocene megafauna. Tropical forest and near-shore sites were occupied for the first time as local groups made more intensive use of a diverse range of lowland habitats.
- c. Stone Bowl complex (ca. 5,500 to 4,200 B.C.). Preliminary data for this complex lead us to hypothesize a subsistence-settlement system dominated by seasonal scheduling of resource utilization. Inland areas were occupied during the wet season, while settlements near rivers, coastal estuaries and sea were oriented towards the dry season exploitation of abundant aquatic fauna.
- d. Melinda complex (4,200 to 3,300 B.C.). The previously established broad-spectrum adaptation of Archaic Belize appears to have been abandoned after 4,200 B.C., when Melinda phase populations focused their food-getting activities in aquatic habitats. Large coastal sites with extensive midden deposits suggest permanent village occupation, or at least the presence of major semi-sedentary base camps, perhaps in the absence of any significant reliance of cultivated plants.
- e. Progreso complex (3,300 to 2,500 B.C.). This final preceramic complex is associated with a general settlement shift from near-shore to riverine locations where foodplain soils would have been attractive to early farming villages.

RESUMEN. Estado de los conocimientos en Septiembre de 1981.

Con base en referencias estilísticas sugeridas por el examen del material lítico, proponemos una secuencia precerámica de 7000 años, de 9.000 a 2.000 a.J-C. Tanto los















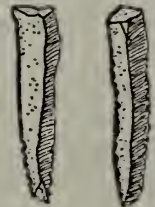









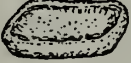



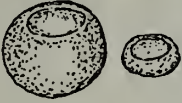
1520 A. D.	MAY			
1800 B. C.	Swazy pottery			
2500 B. C.				
Progreso				
3300 B. C.				
Melinda				
4200 B. C.				
Belize				
5500 B. C.				
Sand Hill				
7500 ± B. C.				
Lowe-ha				
	POINTS	CHOPPERS	BLADES	GRINDING STONES

Fig. 27 . Tentative Belizean pre-ceramic archaeological

CIVILIZATION					Calendar Pyramids Pottery
					Agriculture
					Villages?
					
WOOD GOUGES	STONE BOWLS	NET SINKERS	PLANT SCRAPER PLANES	PICKS	

sequence.

tipos de implementos como los datos contextuales de nuestros descubrimientos parecen implicar la existencia de un modo de adaptación de la población que podría caracterizar las tierras bajas, ya que es diferente del que encontramos en las tierras altas de Mesoamérica durante el mismo período. Las fases y los patrones de explotación del territorio asociados de esta secuencia preliminar son los siguientes:

- a- Complejo LOWE-HA (9.000 - 7.000 a.J-C. aproximadamente). La antigüedad atribuida a raspadores carinados y lascas de piedra se debe a que los relacionamos con artefactos semejantes, procedentes de la Cueva Loltun (Yucatán), donde un conjunto lítico fechado presenta puntas de proyectil de pedunculo bifide (fishtail) y puntas parecidas a las de Plainview, asociadas a restos óseos de caballos y otros animales característicos de una fauna extinta. En Belize, vestigios de pequeños campamentos Lowe-Ha fueron localizados en terrazas arenosas (sand ridges), una cubierta vegetal característica, la sabana, constituyó probablemente un medio ambiente favorable tanto para las grandes manadas de animales como para los grupos nómadas, cazadores y recolectores, de fines del Pleistoceno.
- b- Complejo SAND HILL (7.500 - 5.500 a.J-C. aproximadamente). Los datos proporcionados por la localización geográfica de los sitios sugieren una nueva orientación en la explotación económica del territorio, debido a la disminución de la megafauna pleistocénica. Por primera vez, la selva tropical y las zonas costeras presentan huellas de la presencia de grupos humanos que sacan mayor partido de los diversos hábitats de las tierras bajas.
- c- Complejo BELIZE STONE BOWL (5.500 - 4.200 a.J-C. aproximadamente). Con base en los primeros datos relativos a este complejo, sugerimos la hipótesis de un sistema de asentamiento y de subsistencia fundamentalmente organizados por el carácter estacional de la utilización de los recursos. El interior puede haber sido ocupado durante la estación húmeda (de lluvias), mientras que las riberas de los ríos, los estuarios (esteros) y la costa atlántica parecen haber ofrecido, durante la estación de sequía, abundantes recursos de origen acuático.

- d- Complejo MELINDA (4.200 - 3.300 a.J-C. aproximadamente). La amplitud y la variedad de los modos de adaptacion del hombre al contexto arcaico de Belize paracen reducirse a partir de 4.200 a. de J-C. Hemos descubierto grandes depositos de desechos que implican la existencia de amplios sitios costeros, en los que los habitantes pudieron establecer aldeas permanentes, o por lo menos campamentos-base, cuyo caracter semi-sedentario parece ser independiente de la presencia o ausencia de plantas cultivadas.
- e- Complejo PROGRESO (3.300 - 2.500 a.J-C. aproximadamente). A este ultimo complejo perceramico tardio se la asocia un cambio general en el patron de asentamiento: la poblacion se moviliza desde zonas costeras hacia orillas de rios cuyas cercidas proporcionaran suelos inundados favorables a las antiguas comunidades rurales.

RESUME (Mise au point, Septembre 1981)

Nous avons mis en place, a partir des references stylistiques suggerees par l'examen du materiel lithique, une sequence preceramique de cinq phases, que couvre environ 7 000 ans: de 9 000 a 2 000 av. J.C. Les outils, leurs types, et les donnees contextuelles de nos trouvailles impliquent pour det 'archaïque' in mode d'adaptation des populations different de celui que presentent les hautes terres mesoamericaines pour la meme periode, et qui serait particulier aux terres basses. Voici les phases et les schemes d'exploitation du territoire de cette sequence encore provisoire:

- a.- 'Complexe' Lowe-ha (9 000 - 7 500 av. J.-C. environ). Nous avons mis en rapport les grattiors carenes et les lames de pierre auxquels nous attribuons cette anciennette avec les elements d'un assemblage lithique comparable, trouve dans la grotte de Loltun (Yucatan, Mexique) et date: des pointes de trait a pedoncule bifide ('fishtail') et des pointed genre Plainview y sont asaciees aux restes osseux d'une faune eteinte (cheval, notamment). Au Belize, de petits campements Lowe-ha one ete resperes dans des zones a terrasses sableuses ('sand ridges'); une couverture vegetale caracteristique, la savane, a du constituer un milieu favorable et pour les grands troupeaux et pour leurs predateurs, groupes de chasseurs-cueilleurs nomades de la fin du Pleistocene.

- b.- 'Complexe' Sand Hill (7 500 - 5 500 av. J.C. environ). Les donnees fournies par l'emplacement des sites suggerent que leurs occupants se sont orientes vers une nouvelle exploitation economique du territoire, la megafaune du Pleistocene s'etant rarefiee. Pour la premiere fois, foret tropicales et zones de rivages sont mises en cause: on note une utilisation plus marquee des divers habitats de terre basse.
- c.- 'Complexe' Belize Stone Bowl (5 500 - 4 200 av. J.-C. environ). A partir des premieres informations relatives a ce 'complexe,' nous avancons l'hypothese d'un systeme d'installation et de subsistance fonde sur la saisonnalite de l'utilisation des ressources. L'interieur des terres aurait ete occupe pendant la saison humide, tandis que les bords de rivieres, les estuaires et la cote atlantique auraient fourni, pendant la saison seche, d'abondantes ressources d'origine aquatique.
- d.- 'Complexe' Melinda (4 200 - 3 300 av. J.-C. environ). L'ampleur et la variete des modes de l'adaptation de l'homme au contextes 'archaiques' du Belize se reduisent a partir de 4 200 av. J.-C. C'est principalement dans les zones d'habitat "aquatique" que se deroulent les activites de subsistance des groupes de la phase Melinda. De vastes depots de debris signalent d'importants sites cotiers, villages permanents ou, du moins, campements de base dont le caractere semi-sedentaire semble independant de la persence ou de l'absence de plantes cultivees.
- e.- 'Complexe' Progreso (3 300 - 2 500 av. J.-C. environ). Ce dernier 'complexe' preceramique se caracterise par un net changement dans l'ensemble des systemes d'occupation du territoire. L'emportant sur les sites cotiers, les emplacements en bord de riviere se multiplient, leurs berges inondables offrant un sol favorable aux premiers cultivateurs des communauts villageoises les plus anciennes.

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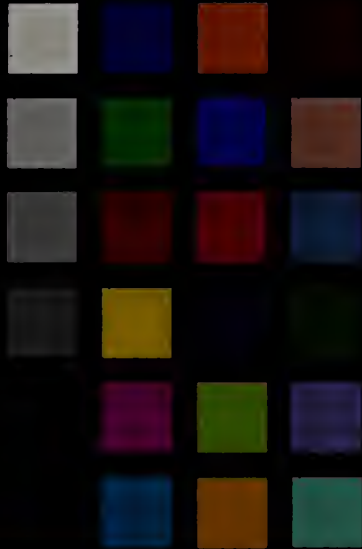
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